THE

Young Aſtronomer's Aſſiſtant,

AND

Countryman's Daily Companion;

Containing the following PARTICULARS:

I. An Account of the COMMON NOTES for finding the MOVEABLE FEASTS and FASTS appointed by the Church.

II. ASTRONOMY, giving a Deſcription and Rules for calculating the chief Circles of the Sphere, of uſe to find Longitude and Latitude in Traveling, Navigation, and Dialing; alſo New Rules for finding the Sun's True Place and Entrance into the Four Quarters of the Year, with Tables thereof for ſeven Years.

III. A NEW KALENDAR for Seven Years, beginning with 1755, and continued to 1762, ſhewing the Riſing and Setting of the Sun and Moon; the Moon's Signs, Change, Full, and Quarters; Southing of fixed Stars at Midnight; Remarkable Times and Eclipſes of both Luminaries; a Table of the Riſing, Southing, and Setting of the Seven Stars; Tables of Terms, Tides, Intereſts, Weights, &c. and many other Things of daily Uſe.

IV. MENSURATION of Land, Timber, &c. Artificers Work, with their Prices, &c.

The Whole interſperſed with RULES for finding every ARTICLE, and adapted to the meaneſt Capacity.

By *WILLIAM HITCHMAN*, Shoemaker,
of Poulton, *near* Cirenceſter.

CIRENCESTER:
Printed for A. WRIGHT, at *Holyrood-Ampney*; and
Sold by the Bookſellers in Town and Country.
M DCC LV.

BRITISH MUSEUM 15 DEC 72

Shame be to them that evil thinketh of it

God is my Right

Enter'd according to Order.

Seasoncoll Glou'shire Feb.y 10 1775

1607/4482.

PREFACE.

Friendly Reader,

THE neceſſity every perſon (in any employment) has of underſtanding the regular motions of time, is indiſputable; which conſideration chiefly induced me to ſet forth to the publick, a plain and brief deſcription thereof; that all, who diligently read this ſmall treatiſe, may underſtand not only this, but any other work of a like nature.

I need not here recount the particulars contained in this book, whereof the contents will ſufficiently inform you; I ſhall therefore only give ſome account of the method I have taken in my calculations.

Firſt, I have formed the major part of this work, by the Rules herein given, (which will evidently appear to any that ſhall make trial) which though they omit ſome of the lunar inequalities, on account of an eaſy and ſpeedy method, yet will they anſwer the purpoſes of every countryman, in regard both of time and motion.

Secondly, The time to which theſe calculations are moſtly adjuſted, is that of the clock, called equal time, as of moſt uſe in finding the nightly appearances of the moon and ſtars; whereas many others compute to apparent time, or according to a ſun-dial, which, at ſome times, will vary above 16 minutes; this, together with the difference of meridians make 23 minutes the difference of time that may happen betwixt *London* and *Cirenceſter*, if one be to equal, and the other to apparent time. I mention this becauſe ſome perſons more nice than wiſe, may (by compariſon with another) think, they have found errors where there are really none; and for want of rightly underſtanding the difference of longitude and latitude, to which different authors adapt their calculations, may paſs unjuſt cenſures on thoſe whoſe works are above their comprehenſion.

Kind Reader, I wiſh you all the benefit as can poſſibly ariſe from a work of this nature, to which purpoſe I would adviſe you to read attentively from beginning to end, and then I doubt not but you'll ſoon be able to fathom the bottom thereof.

I cannot omit returning my hearty thanks to all my friendly ſubſcribers. It has been my ſtudy to render it compleat, and to anſwer the end for which it was deſigned: I hope I ſhall offend none, (if I do 'tis unknown to me) but am with all due difference to better judgment,

Your humble ſervant,

And well-wiſher,

W. H.

CON-

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A LIST

A LIST *of the* SUBSCRIBERS NAMES *who take* SIX BOOKS, *&c.*

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I:ROWSHAM

THE YOUNG

Aſtronomer's Aſſiſtant, *&c.*

FORASMUCH as in all kalendars you may find the common notes for each year, as the Golden Number, Epact, Cycle of the Sun, Dominical Letter, Roman Indiction, Number of Direction, *&c.* all which I ſuppoſe not one in a hundred knows any of their uſes, or why they are inſerted; my deſign being therefore to inform thoſe that are ignorant, I ſhall endeavour to explain 1ſt, what they are; 2d, what are their uſes; 3d, how to find them by numbers and tables; and laſtly, give examples to make all plain and familiar.

Of the Prime, *or* Golden Number.

THE Golden Number is a revolution of nineteen years, in which time the moon returns to make the ſame aſpects with the ſun, as fulls or changes, quarters, *&c.* commonly on the ſame day of the month that they were on nineteen years before, or will be nineteen years to come.

The uſe of the Golden Number is to find the movable feaſts of the church, as *Eaſter*, *&c.* by the full moon happening next after the 21ſt of *March*, the following ſunday being always *Eaſter-ſunday*.

To find the Golden Number.

Rule. *Add* 1 *to the year of our Lord, and divide by* 19; *the remainder is the Prime or Golden Number.*

Example. Find the Golden Number for the year 1754.

To 1754
Add 1
Divide by 19)1755(92
171
45
38
Remain 7 *the Golden Number.*

Of the Epact.

THE Epact is the moon's age at the beginning of the new year; it being the exceſs of the common ſolar year above the lunar, of eleven days every twelve lunations, ſo that in nineteen years, the moon compleats twenty times twelve lunations, and begins with the ſun again.

To

To find the Epact.

RULE. *Subtract* 1 *from the Golden Number of the year, the remainder multiply by* 11, *and divide that product by* 30, *and the remainder is the Epact.*

EXAMPLE. *What is the Epact for the year* 1754? Golden Number is 7
ſubtract 1

remain 6
multiply by 11

divide by 30)66(2
60

remain 6 the Epact.

A TABLE *ſhewing the* Epact *for ever, by having the* Golden Number.

Golden Numb.	Epact.	Golden Numb.	Epact.	Gold Numb.	Epact.
1	0	8	17	15	4
2	11	9	28	16	15
3	22	10	9	17	26
4	3	11	20	18	7
5	14	12	1	19	18
6	25	13	12		
7	6	14	23		

USE *of the foregoing Table.*

Find the Golden Number for the year, which look in the foregoing table, and in the next column, right againſt it is the Epact.

The uſe of the Epact is to find the moon's age at any time of the year; but there is no rule for this without exception.

To find the Moon's Age by the Epact.

RULE. *For January, add to the Epact* 1; *for February,* 2; *March,* 1; *April,* 2; *May,* 3; *June,* 4; *July,* 5; *Auguſt,* 6; *September,* 8; *October,* 9; *November,* 10; *and for December,* 10; *to which likewiſe add the day of the Month. If theſe three ſums amount to more than* 30, *take the overplus; but if leſs, the whole ſum is the moon's age, provided your month has in it* 31 *days; but take the overplus of* 29, *if your month has in it but* 30 *days. This will moſt commonly find the true age.*

EXAMPLE I. *What was the moon's age on April the* 1*ſt*, 1754?

Epact is	6
For April, I add	2
Day of the Month	1
The moon's true age	9

EXAMPLE II. *What will be the age of the moon on the* 15*th of June* 1760?

Epact is 12
add, for June, 4
Day of the month 15

31 from which
(June having 30 days) ſubtract 29

true age of the moon 2

By the moon's age are found, her riſing, ſetting and ſouthing; ebbing and flowing of the tides, *&c.* by mean motion; which, tho' it has a ſmall variation from the true motion, yet it is ſufficiently exact for any country buſineſs; and they are very eaſily found, according to theſe rules, by a perſon of mean capacity. I ſhall inſert tables for finding the riſing, ſetting, *&c.* of the ſun and moon hereafter; and here proceed to the Cycle of the Sun.

Of the Cycle *of the* Sun.

THE ſolar Cycle is a revolution of twenty-eight years, in which ſpace of time the Dominical or Sunday Letters return to the ſame order as they were twenty-eight years before, or will be ſo long after.

To find the Cycle *of the* Sun.

RULE. *Add* 9 *to the year of our Lord, divide that ſum by* 28, *and the remainder is the Cycle of Sun.*

EXAMPLE. *What is the Cycle of the Sun for the year 1755?*

To 1755
add 9

which divide by 28)1764(63
168

84
84

00

Note, If nothing remains, as in the above example, the Cycle of the Sun is 28, or a whole diviſor.

A TABLE *ſhewing the* Dominical Letter *by the* Cycle *of the* Sun; *as alſo, the* Cycle *of the* Sun *by the* Dominical Letters, *perpetually.*

Cycle of the Sun.	Domin. Letter.	Cycle of the Sum.	Domin. Letter.	Cycle of the Sun.	Domin. Letter.	Cycle of the Sun.	Domin. Letter.
1	D C	8	B	15	G	22	E
2	B	9	A G	16	F	23	D
3	A	10	F	17	E D	24	C
4	G	11	E	18	C	25	B A
5	F E	12	D	19	B	26	G
6	D	13	C B	20	A	27	F
7	C	14	A	21	G F	28	E

USE *of the foregoing Table.*

This table, if you know the Dominical Letter, will ſhew the Cycle of the Sun; but is more properly adapted to ſhew the Dominical Letter, the Cycle of the Sun being known. For this purpoſe, find the Cycle of the Sun in the columns mark'd Cycle, *&c.* at the top of the table, and right againſt it in the next column is the Dominical Letter required.

EXAMPLE. The Cycle of the Sun for the year 1755 is found to be 28, over-againſt which you have E, in the table, for the Sunday-Letter of that year.

To find the Cycle of the Sun, obſerve, that the firſt, fifth, ninth, thirteenth, ſeventeenth, twenty-firſt, and twenty-fifth years of the Cycle are always leap-years: then mind what two letters ſtood for the laſt leap-year, and how many years are ſince; then find your letter in the table anſwerable to thoſe in the leap-year you before found, with the diſtance therefrom, and the figure to the left in the ſame line is the Cycle of the Sun.

EXAMPLE I. *What is the Cycle of the Sun in the year* 1759, *the Dominical Letter being G, the third from leap-year?*

I look the G in the table that is three places diſtant from the foregoing leap-year, againſt which, in the left column I find 4, the Cycle of the Sun required. Ex-

Example II. *What is the Cycle of the Sun for the year* 1761, *the Dominical Letter* D, *the firſt after leap-year?*

I find D directly after FE, and the figure 6 in the left-hand column anſwering it, which is the Cycle of the Sun required.

Thus may you work backward and forward, and by having one, may eaſily find the other.

Of the Dominical *or* Sunday-Letter.

IT hath been a cuſtom for many years to place the letter A for the firſt Day of *January*, for the ſecond B, and ſo on to G; and then again to begin with A, taking the firſt ſeven letters of the alphabet to repreſent the ſeven days contained in a week, throughout the whole year; and according as ſunday falls, the letter repreſenting that day of the week is call'd the Dominical Letter, as in the following table.

January the 1ſt is A,
2d is B,
3d is C,
4th is D,
5th is E,
6th is F,
7th is G,
8th is A, and ſo on thro' the year.

By this you may ſee, that if ſunday falls on the firſt of *January*, A is Sunday-Letter; if on the 2d, B; on the 3d, C; and ſo on.

When it is Biſſextile, or leap-year, we have two Dominical Letters, occaſion'd by putting one day more into February, where the letter F is put for two days together, *viz.* the 24th and 25th; ſo that the 29th has the ſame letter ſerving to it in leap-year, as the 28th has in a common one, where F is inſerted but once in that place.

EXAMPLE. *In the year* 1756 *the Dominical Letters are* D C: D *is uſed 'till after the* 22d *of February, when, by having* F *put twice the following Week, the* 29*th (being the next Sunday) will have* C, *which is Sunday Letter from that place to the year's end.*

To find the Dominical Letter another way.

RULE. *Till the year* 1899, *incluſive, add to the year of our Lord it's fourth part, omitting fractions*; *alſo add the number* 1; *divide the ſum by* 7, *and if there is no remainder, then* A *is Dominical Letter*; *if* 1 *remains, it is* G; *if* 2, F; 3 E; 4 D; 5 C; 6 B.

For the next century, i. e. *from the year* 1800 *to the year* 1899 *incluſive, add to the current year only it's* 4*th part*; *then divide by* 7, *and proceed as before.*

In leap years the Letter found as above will be Sunday Letter from February to the year's End.

Of

Of the Roman Indiction, *and* Number *of* Direction.

THESE numbers are ſet down in ſome of our kalendars, although of no uſe to us as I know of; yet for ſatisfaction to my curious readers, I will give you the Significations of them.

The Roman Indiction is a circle of 15 years, or three times five, at the end of which, the Romans exacted their ſeveral tributes, 1ſt of gold, 2d of ſilver, and 3d of braſs and iron.

It was firſt appointed by the emperor Conſtantine at the end of the nicene council, inſtead of the Olympick games, kept every fifth year, which was the epocha of time obſerved amongſt the Grecians.

The Number of Direction, is the ſpace of 35 years contained between the higheſt and loweſt falling of any of the moveble feaſts; as of Eaſter, the higheſt is on the 22d of March, the loweſt on the 25th of April; of Whitſuntide, from the 10th of May, to the 13th of June, and ſo of the reſt in the ſame proportion.

A TABLE to find Eaſter till the year 1899, *incluſive.*

Golden Numb.	A	B	C	D	E	F	G
1	April 16	17	18	19	20	14	15
2	April 9	3	4	5	6	7	8
3	Mar. 26	27	28	29	23	24	25
4	April 16	17	11	12	13	14	15
5	April 2	3	4	5	6	Mar. 31	April 1
6	April 23	24	25	19	20	21	22
7	April 9	10	11	12	13	14	8
8	April 2	3	Mar. 28	29	30	31	April 1
9	April 16	17	18	19	20	21	22
10	April 9	10	11	5	6	7	8
11	Mar. 26	27	28	29	30	31	25
12	April 16	17	18	19	13	14	15
13	April 2	3	4	5	6	7	8
14	Mar. 26	27	28	22	23	24	25
15	April 16	10	11	12	13	14	15
16	April 2	3	4	5	Mar. 30	31	April 1
17	April 23	24	18	19	20	21	22
18	April 9	10	11	12	13	7	8
19	April 2	Mar. 27	28	29	30	31	April 1

USE *of the foregoing Table.*

Find the Golden Number and Dominical Letter of the year you enquire for; look for the Sunday Letter on the top, and prime number in the left hand column; in the angle is the month day on which Eaſter falleth.

EXAMPLE. *On what day doth Eaſter happen in the year* 1755*?*

I find 8 to be the Golden Number, and E the Dominical Letter, which look in the table; and in the ſame line with the Golden Number, and in the column under the Dominical Letter, I find March 30, which is Eaſter-ſunday.

Thus have I laid down the ſeveral rules for finding all the common notes for any year; and hope I have been plain enough to be underſtood by the meaneſt of my readers, to whom I have a deſire to be uſeful.

Here follow ſome practical examples for the exerciſe of a young learner, wherein the former work is repeated, and rules uſed in finding the common notes for the year of our lord, 1761.

Ex. I. *What is the Golden Number for* 1761*?*

To 1761
add 1

divide by 19)1762(92
171

52
38

remain 14, the Golden Number.

What

EXAMPLE II. *What is the* Epact *for* 1761?

From Gold. Numb. 14
Subtract 1

Remains 13
Multiply by 11

Divided by 30)143(4
120

Remain 23 the Epact.

EXAMPLE III. *What is the* Cycle *of the* Sun *in* 1761?

To 1761
Add 9

Divide by 28)1770(63
168

90
84

Remains 6 the Cycle of the Sun.

EXAMPLE IV. *What is the* Dominical Letter *for* 1761?

I look in the table (page 18) for the Cycle of the Sun (6) and there I find D to be the Sunday Letter; otherwiſe by the rules ſet down in page 21, I find D for a Dominical Letter thus:

To 1761
Add 440 its 4th part.
And 1

Divide by 7)2202(314
21

10
7

32
28

4 which by the rule in page 21 is D.

EXAMPLE V. *On what Day doth Eaſter fall, in* 1761*?*

By the Golden Number 14 and Dominical Letter D, in page 23, I find Eaſter to fall on the 22d of March.

To find Shrove-Sunday.

RULE. *Subtract* 49 *days from the day on which Eaſter falls, and you have Shrove-Sanday.*

To find Whitſunday.

RULE. *Add* 49 *days to the day on which Eaſter falls, and you have Whitſunday required.*

For other Kalendar days *obſerve theſe obſervations.*

I. That Epiphany or Twelfth Day is always on the 6th of January, the Sundays after Epiphany are reckoned till Septuageſima Sunday.

II. Septuageſima Sunday is the third before the firſt Sunday in Lent, ſo named becauſe it was about ſeventy Days before Eaſter.

III. Lent begins on Aſh-Wedneſday. The firſt Sunday after Shrovetide, is the firſt Sunday in Lent. The Sundays in Lent, are numbered till Eaſter Sunday.

IV. Rogation Sunday is a fortnight before Whitſunday, and the thurſday in Rogation week is Holy Thurſday; ſuppoſed to be the day our Saviour aſcended up into heaven.

V. Trinity Sunday is the firſt after Whitſunday. The ſundays after Trinity are counted to Advent, exluſive.

IV. Sundays in Advent are four; the firſt, if it falls not on St Andrew's day (November the 30th) is the next ſunday after it. The laſt is the ſunday before Chriſtmas.

Thus may you trace out all the feaſts and faſts appointed by the church, very eaſily, when once you have found out the feaſt of Eaſter

When you have calculated your Golden Number, Epact, Cycle of the Sun, Dominical Letter, Eaſter, and the other moveable feaſts and faſts depending thereon (as ſhewn above) gather them into a table, where they may ſtand fair and regular, as in the following for the year 1761.

A TABLE of the common Notes and moveable Feaſts for the year 1671.

The Golden Number — 14
Epact ——— — 23
Cycle of the Sun ——— 6
Dominical Letter ——— D
Sundays after Epiphany - - 1
Septuageſima Sunday - Jan. 18
Shrove Sunday ——— Feb. 1
Eaſter Sunday ——— Mar. 22
Rogation Sunday — Apr. 26
Holy Thurſday — Apr. 30
Whitſunday ——— May 10
Trinity Sunday ——— May 17
Sundays after Trinity — 27
Advent Sunday ——— Nov. 29

A TABLE ſhewing the Common Notes, Eaſter and Whitſuntide till the year of our Lord 1760.

Years of our Lord.	Golden Numbers	Epacts.	Domin. Letters.	Eaſter Sundays.	Whitſundays.
1755	8	17	E	March 30	May 18
1756	9	28	DC	April 18	june 6
1757	10	9	B	April 10	May 29
1758	11	20	A	March 26	May 14
1759	12	1	G	April 15	June 3
1760	13	12	FE	April 6	May 25

OF

O F
ASTRONOMY.

MY deſign in this ſmall treatiſe, is to ſatisfy the curioſity of thoſe whoſe genius's are led to the contemplation of the works of Jehovah, but are not capable of underſtanding abſtruſe and learned authors, who inſtead of explaining their conceptions to one intirely ignorant, by their rhetorical figures, and high-flown expreſſions, need themſelves an expoſitor. I ſpeak not in diſreſpect to thoſe learned men, whoſe works I reverence; but in regard of the inability of moſt of a low claſs (though perſons of quick wit and good ſenſe) to underſtand terms of art without plain and familiar explanations.

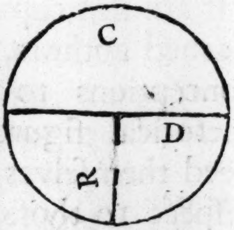
I ſhall therefore endeavour (if God permit) to treat my ſubject as plain as poſſible, ſuiting my language to the capacity of the meaneſt of all ſuch as ſhall read this little book; that Aſtronomy (which has been the pride of kings and men of great renown, becauſe of its ſublimity and utility) may gain more reſpect with the vulgar, who by being more acquainted with it, may ſee more of its uſefulneſs. How light ſoever ſome perſons may think of this ſcience, yet there are ſome parts the knowledge of which is abſolutely neceſſary.

Aſtronomy teaches the knowledge of the heavenly bodies, by ſhewing their periodical revolutions, diſtances, magnitudes, order and motion;

by which all our times and ſeaſons are regulated and known; alſo the diſtances of places by Longitude and Latitude; all which ſhall be treated of in their proper places.

ASTRONOMICAL DEFINITIONS and PROBLEMS.

Of a Circle.



A CIRCLE is a figure perfectly round, and is made by the revolution of a line called the circumference, (as C) every way equally diſtant from a point in the middle called the center.

A line drawn through the center is called the diameter, (as D)

A line drawn only from the center to the circumference, the ſemidiameter or radius, (as R) and ſometimes the whole line of ſines.

There are many other lines belonging to a circle; as ſines and coſines, tangents and cotangents, ſecants, chords, &c. which are uſed in Aſtronomy and Dialling, performing the work with a great deal more eaſe and exactneſs, than can poſſibly be done by common arithmetick. A book with the canon of ſines and tangents, ought to be had by every mathematician; which is cheap and plain to be learned, but the tables are too large to be inſerted in this book.

Of circles there are two ſorts, great and ſmall; a great circle is one that divideth the heavens into two equal Parts, and is always ſuppoſed to contain 360 degrees, each degree to contain 60 minutes, and every minute 60 ſeconds, &c.

A ſmall circle divideth the Heavens unequally into two parts, having a greater part on one ſide than on the other.

Of the Horizon.

IT is a great circle (and the only one viſible) dividing, by the earth, the viſible heavens from the parts inviſible; or that circle round us, where the heaven and earth ſeem to join together; in which the ſun, moon, and ſtars, riſe and ſet, for when the ſun is riſing, we commonly ſay he is in the eaſtern horizon, and when ſetting, he is in the weſtern horizon.

If we move our ſituation we have a new horizon, which occaſioneth the difference of time in the ſun riſing, and length of the day, in different places at one and the ſame time of the year.

Of the Poles *of the* Equinoctial, *commonly called the* North *and* South Poles.

THE North Pole is continually in our ſight, and is elevated to us in the north as much as the South Pole is depreſſed in the ſouth. They are called the poles of the world, becauſe thoſe points only are fixed in reſpect thereunto, and the whole heavens beſide appear moveable upon an imaginary line called the Axis of the World, the ends of which terminate in thoſe polar points, round which the earth moves in the ſpace of 24 hours.

The pole of every circle therefore is 90 degrees from it, and is a point perpendicular to its plane. The poles of the horizon are the points directly over head and under foot, and the poles of the World are the poles of the equinoctial.

Of the Equinoctial.

THE Equinoctial is a great circle wherein the ſun appears about the 21ſt of March, and 22d of September, making the day and night of equal length in moſt parts of the earth; thoſe who live under the equinoctial line are black, by reaſon the ſun is ever near them; they have two ſummers and two winters in every year, for when the ſun paſſeth the line it is their ſummer, and when in the tropick it is their winter, which far ſurpaſſeth in heat our ſummer.

It is from this circle that we reckon latitude in reſpect of the earth; for when a ſhip is under this line, it has no latitude; but moving north, it has northern; or ſouth, it has ſouthern latitude; which is found in the night by a quadrant in taking the height of the pole ſtar, and in the day by the declination and altitude of the ſun. When you are under this circle, the poles are in the horizon, but moving towards the North or South, one is loſt, and the other is elevated juſt ſo many degrees from the horizon as you are diſtant from being under the Equinoctial. Concerncerning the longitude of any place obſerve the difference of Meridians in the following ſection.

Of the Meridian.

IT is ſo called, becauſe when the ſun is in it, it is Mid-day. It is a great circle paſſing over our heads through the poles of the world, and varys according to our ſituation, for if we go eaſt or weſt we have a new Meridian; they are likewiſe called circles of longitude on the earth, for longitude is the difference between the Meridians of any two places. It is by ſome taken from Teneriff, one of the Canary iſlands, accounting it eaſtward around the globe, but we moſtly take it from the longitude of London inſtead of Teneriff, accounting it eaſtward or weſtward.

It is certain that the whole globe of earth revolves round on her axis in 24 hours; ſo that near the poles of the world, her daily motion is ſcarcely to be diſcerned, whilſt under the equinox, ſhe moves 15 degrees in the ſpace of an hour; which motion diminiſhes, the nearer we approach to either North or South pole, till it is imperceptible; hence it is, that we being ſituated northwardly, have 1 minute of longitude for near 11 miles ſtatute meaſure (accounting with Mr. Norwood 69 miles, 4 furlongs, 14 poles and 9 feet in a degree) whereas under the equinoctial line, they have 17 miles for one minute of time in their Meridian.

The uſe of this is, that if you go eaſtward ſtill in the ſame latitude 11 miles, it is there 12 o'clock a minute ſooner than in the Place you came from; or if you go weſtward, mid-day will be a minute later than before.

EXAMPLE. *Let it be required to find the Longitude of Glouceſter from London.*

We find by actual menſuration 110 miles between St. Paul's, London, and the college in Glouceſter, weſtward; then by accounting near 11 miles for one minute of time, it comes to 10 minutes, *i. e.* their mid-day is 10 minutes paſt noon in London.

But the common method is by accounting 60 miles in a degree, which make them longer than 8 furlongs by 280 yards, or near 51 poles in a mile, and by reckoning them thus long, *viz.* 9 furlongs 11 poles, your work will agree with ſtatute meaſure: therefore to find out the difference of motion in each circle of latitude, how far you muſt go for one minute of longitude, obſerve the following proportions:

As the Radius or ſine of 90° is to the co-ſine of latitude, ſo is the ſine of 15° (for ſo much of the Equinoctial moves in an hour) to the ſine of motion in degrees and minutes required, *viz.* the motion of the place in an hour.

As the Radius 90° ——	10.000000
Is to the Co-ſine of Latitude 51° 32′	9·793832
So is the ſine of 15° —— —	9·412996
To the ſine of motion 9° 16′ in hour	9.206828

Then by accounting 69 ½ miles to a degree, we have this analogy. If 1° requires 69 ½ miles, what will 9° 16′ require? Anſwer 644 miles, which London is carried eaſtward in an hour, or 10 miles and 11 15ths in a minute; near 11 as was ſaid before; but by reckoning 60 miles in a degree, the proportion is 556 ſuch miles in an hour, and 9 ¼ miles in a minute.

There have been ſeveral attempts made to find the longitude by Sea; as firſt, by an eclipſe of the moon, ſecond by a watch, third by the motion of the ſun from the moon, fourth by the diſtance from the moon and ſome fixed ſtars near the ecliptick, fifth by the eclipſes of Jupiter's Satellites, *&c.* all which do ſometimes fail and are not a ready recourſe at all times; for could ſeamen as readily find longitude as latitude, it would be greatly for their benefit in directing a more ſteady courſe.

Of the Ecliptick.

THE Ecliptick is a great circle croſſing the Equinoctial in two oppoſite points, in the firſt ſcruple of the ſigns Aries and Libra; its utmoſt bounds are 23° 29′ from the Equinoctia line, called the ſun's greateſt declination.

This circle is divided into 12 equal parts, calle ſigns, which are again ſubdivided into degree minutes, and ſeconds, &c. whoſe quantities an characters are theſe following.

60 Seconds noted thus (″) make 1 Minute.
60 Minutes (′) make one degree.
30 Degrees (°) make 1 ſign, and
12 ſigns the circle, or 360°.

The ſigns are called northern that are on th north ſide of the equinox, as Aries ♈, Taurus ♉ Gemini ♊, Cancer ♋, Leo ♌, Virgo ♍; and ſouthern which are on the ſouth ſide thereof, a Libra ♎, Scorpio ♏, Sagitary ♐, Capricorn ♑ Aquarius ♒, and Piſces ♓.

It is called the Ecliptick, becauſe the eclipſe of both ſun and moon happen under it, an is the circle the ſun always moves in, paſſing through the 12 ſigns once a year, or in 365 days 5 hours, 48 minutes, 54 ſeconds, 41 thirds, 2 fourths.

The oblique ſituation of the Ecliptick circle in reſpect to the earth's daily motion, doth cauſe the ſun by annual motion to approach ſo near the north and ſouth poles, as to give light, life, and heat to the whole globe, and conſtitute each particular ſeaſon of the year according to his diſtance from any part thereof.

The wiſdom and goodneſs of God Almighty doth wonderfully appear, in that he has ſo ordered the courſe of nature that every part of the creation is uſeful in its proper place, for he made nothing in vain; he hath appointed the ſun to rule the day and the moon to rule the night, ſhe, by her borrowed light, ſupplies the place of the abſent ſun, while he is gone to viſit our antipodes; their poſitions and motions are ſuch as to be ſerviceable to all the earth; in harveſt time, when longeſt days are moſt deſired, to eaſe the earth of its burthen, it affords us ſufficient time for that purpoſe; and the moon regularly riſes when the ſun doth diſappear.

Of the Zodiack.

SO called from the figures of the living creatures imagined in it, called 12 Conſtellations, containing about 270 ſtars of note, according to ſome, its breadth is 8 degrees on each ſide of the Ecliptick, being the utmoſt limits of the planets, latitudes, or diſtances therefrom, who wander to and fro' according to the inclination of their orbs.

Of the Tropicks.

THe Tropicks are two ſmall circles, parallel to the equinoctial and equally diſtant from it 23° 29′, to which the ſun cometh twice a year, to the Tropick of cancer about the 22d of June, when he is at the higheſt, and to the Tropick of capricorn on the 23d of December, when he is at the loweſt to us, making our longeſt day and ſhorteſt Night. When the ſun is in either of the Tropicks, he is in that part of the Ecliptick that is fartheſt diſtant from the Equinoctial, and returns back thereto, ſo that his greateſt declinations are in thoſe Circles.

Of the Polar Circles.

THey are two very ſmall circles, parallel to the equinoctial, and as far from the poles as the Tropicks are from the Equinox, *viz.* 23° 29′; That which ſurroundeth the north pole and is always in our ſight, is called the Arctick circle. The ſtars ſituated in this circle, never ſet to us, but always appear moving round the pole: likewiſe the ſouth Polar Circle, is called the Antarctick. which is 28 degrees below our horizon, conſequently out of our ſight. It is in theſe circles that the poles of the Ecliptick are moved, in reſpect of the earth, tho' fixed in the heavens.

Of the Colures.

THe Colures are two great circles which interſect one another at right angles in the poles of the world, to one of which the ſun cometh, when he entereth either of the four quarters of the year.

The firſt is called the Equinoctial Colure, which paſſeth through the poles of the world, and the beginning of Aries and Libra, making the Seaſons of ſpring and autumn.

The ſecond is called the Solſticial Colure, which likewiſe paſſeth through the poles, and the beginning of cancer and capricorn, and makes the ſeaſons of ſummer and winter.

Of the Zenith *and* Nadir, *&c.*

THe Zenith is that point of heaven which is directly over one's head, wherever we be, that is 90 degrees from the horizon, being its pole; it is otherwiſe called the Vertex, or vertical point.

The Nadir is a point oppoſite to the Zenith, directly under our feet.

Vertical Circles are great ones, paſſing through the *Zenith* and Nadir, croſſing the horizon at right angles; the ſun, moon, and ſtars, are ſaid to be vertical to any place, when they are in the Zenith thereof; often times mentioned by thoſe who write of Eclipſes, &c.

Of the Declination *of the* Sun, Moon *and* Stars.

DEclination is the diſtance of any ſtar from the equinoctial line, it is therefore an arch of the Meridian contained between it and the ſtar, and is accounted either north or ſouth.

Having the ſun's longitude (or place in the Ecliptick, from the beginning of Aries, which point always begins longitude in the heavens) and his greateſt declination, you may find his declination at any time aſſigned, by this analogy.

As the Radius 90° is to the ſine of the ſun's greateſt Declination, 23° 29′; ſo is the ſine of the ſun's longitude, to the ſine of his Declination ſought.

Example I. *What is the ſun's declination on the* 12*th of March*, 1756, *at noon, the ſun's place in the Ecliptick*, ♓ 22° 23′ ?

Note. *You muſt take his diſtance from the nigheſt Equinoctial point in degrees.*

As Radius 90° ——	10.000000
To the ſine of the ſun's greateſt Declination, 23° 29′	9.600409
So is the ſine of the ſun's place, 7° 37′ from the Equinoctial point ♈.	9.122362
To the ſine of his preſent Dec. 3° 2′	8.722771

The Sun being on the ſouth ſide of the Equinoctial, the declination is therefore ſouth, 3° 2′ therefrom, as above.

Example II. *What is the ſun's declination on Auguſt the firſt*, 1757, *at noon.* ☉ *in* ♌ 9° 15′ *diſtant from the neareſt equinoctial point libra,* 50° 45′

R

As	R. 90°	10.000000
:	S. 23° 29′	9.600409
: :	S. 50° 45′	9.888961
:	17° 58′	9.489370

Here obſerve the ſun is in a northern ſign, therefore his declination at the time required, is 17° 58′ north.

A TABLE *of the Declination of every degree in the Ecliptick.*

Signs	♈		♎	♉		♏	♊		♐	Signs
Deg.	°	′	″	°	′	″	°	′	″	Deg.
0	0	0	0	11	29	33	20	11	15	30
1	0	23	54	11	50	35	20	23	48	29
2	0	47	48	12	11	26	20	35	59	28
3	1	11	42	12	32	4	20	47	47	27
4	1	35	34	12	52	31	20	59	12	26
5	1	59	25	13	12	44	21	10	14	25
6	2	23	14	13	32	45	21	20	52	24
7	2	47	1	13	52	32	21	31	7	23
8	3	10	45	14	12	5	21	40	57	22
9	3	34	26	14	31	24	21	50	23	21
10	3	58	4	14	50	28	21	59	25	20
11	4	21	38	15	9	17	22	8	2	19
12	4	45	9	15	27	51	22	16	14	18
13	5	8	34	15	46	9	22	24	0	17
14	5	31	55	16	4	11	22	31	20	16
15	5	55	11	16	21	57	22	38	16	15
16	6	18	21	16	39	26	22	44	45	14
17	6	41	26	16	56	37	22	50	48	13
18	7	4	23	17	13	31	22	56	25	12
19	7	27	15	17	30	7	23	1	36	11
20	7	49	59	17	46	25	23	6	20	10
21	8	12	36	18	2	24	23	10	38	9
22	8	35	5	18	18	3	23	14	28	8
23	8	57	26	18	33	25	23	17	52	7
24	9	19	39	18	48	25	23	20	49	6
25	9	41	43	19	3	5	23	23	19	5
26	10	3	37	19	17	25	23	25	22	4
27	10	25	21	19	31	25	23	26	57	3
28	10	46	56	19	45	3	23	28	5	2
29	11	8	20	19	58	20	23	28	46	1
30	11	29	33	20	11	15	23	29	0	0
Deg.	♍		♓	♌		♒	♋		♑	Deg.

USE *of the foregoing Table.*

Find the ſign at top or bottom of the table, and the degree in one of the ſides, and in the common angle is the declination ſought, which is north in a northern ſign, and ſouth in a ſouthern one.

EXAMPLE. *What declination hath* 11° ♉ *?*

I find ♉ on the top, and 11° in the left ſide, and in the angle is 15° 9′ 17″, the declination ſought, which is north, becauſe ♉ is a northern ſign; and would be the ſame declination for the 19° ♌, and alſo for 11° of ♏, and 19° of ♒, but theſe laſt two being ſouthern ſigns, the declination muſt be ſouth likewiſe.

A TABLE *of Equation for the declination of the planet's latitude.*

In north ſigns add, in ſouth ſigns ſubtract, in north latitude; contrarywiſe in ſouth latitude.

Planets Lat. in Degr.	1		2		3		4		5		6		North or S. Lat.
	°	′	°	′	°	′	°	′	°	′	°	′	
♎ ♈	0	55	1	50	2	45	3	40	4	35	5	30	♎ ♈
3	0	55	1	50	2	45	3	40	4	35	5	30	27
6	0	55	1	50	2	45	3	40	4	35	5	30	24
9	0	55	1	50	2	45	3	40	4	35	5	30	21
12	0	55	1	50	2	45	3	40	4	35	5	31	18
15	0	55	1	50	2	45	3	41	4	36	5	32	15
18	0	55	1	50	2	46	3	41	4	36	5	33	12
21	0	56	1	51	2	46	3	42	4	37	5	34	9
24	0	56	1	51	2	47	3	43	4	38	5	35	6
27	0	56	1	52	2	48	3	43	4	39	5	36	3
♏ ♉	0	56	1	52	2	48	3	44	4	40	5	37	♍ ♓
3	0	56	1	52	2	59	3	45	4	41	5	38	27
6	0	56	1	53	2	50	3	46	4	42	5	39	24
9	0	57	1	53	2	50	3	47	4	43	5	40	21
12	0	57	1	54	2	51	3	48	4	45	5	42	18
15	0	57	1	54	2	51	3	49	4	46	5	43	15
18	0	57	1	55	2	52	3	50	4	48	5	45	12
21	0	57	1	55	2	53	3	51	4	49	5	46	9
24	0	58	1	56	2	54	3	52	4	50	5	48	6
27	0	58	1	56	2	54	3	53	4	52	5	49	3
♐ ♊	0	58	1	57	2	55	3	54	4	53	5	51	♌ ♒
3	0	58	1	58	2	56	3	55	4	54	5	52	27
6	0	59	1	58	2	56	3	56	4	55	5	54	24
9	0	59	1	58	2	57	3	57	4	56	5	55	21
12	0	59	1	59	2	58	3	58	4	57	5	56	18
15	0	59	1	59	2	59	3	59	4	58	5	57	15
18	0	59	1	59	2	59	3	59	4	59	5	58	12
21	1	0	2	0	3	0	4	0	5	0	5	59	9
24	1	0	2	0	3	0	4	0	5	0	6	0	6
27	1	0	2	0	3	0	4	0	5	0	6	0	3
♑ ♋	1	0	2	0	3	0	4	0	5	0	6	0	♋ ♑

In ſouth ſines add, in north ſigns ſubtract, in ſouth latitude; contrarywiſe in north latitude.

USE

USE *of the foregoing Table.*

Firſt find the declination of longitude in the ecliptick, by the foregoing rules, or the table of declinations. Secondly, with the moon's or ſtar's latitude on the top column of this table, in degrees, and with their longitude in one of the ſide columns, to every third degree, in the common angle you have the equation anſwering to their latitude, which according to the titles added to, or ſubtracted from, the declination anſwering their longitude, gives the true declination to both longitude and latitude.

I inſert the foregoing table chiefly for the ſpeedy finding the declination of the moon at all times, by which her meridian altitude is eaſily known.

EXAMPLE I. *What declination hath the moon in 3° ♓ with latitude 5° north?*

The declination of the moon's longitude, viz. 3° ♓ is —— —— 10°.25′ South

Then I look in the preceeding table in the top column for 5° of latitude, and in the right hand ſide-column for her longitude 3° ♓ and in the common angle I find 4° 39′ the equation, which in regard of the moon being in a ſouthern ſign and north latitude, I find by the title is ſubtracted from the declination found by longitude, gives her true declination, anſwering both longitude and latitude 5° 46′, as in the margin.

4.39
——
5.46 South

EXAMPLE II. *What declination hath the moon, or a ſtar in* 21° ♐ lat. 2° N.?

The declination of long. ♐ 21°	23°.11′ S.
the equation found by the table, ſubt.	2 0
the true dec. to long. and lat.	21 11 S.

EXAMPLE III. *What declination hath the moon or a planet in* 2° ♈ with lat. 3° ½ *ſouth?*

The declination of long. ♈ 2°	0 48′ North
The equation found as before (by making proportion)	3 12 Subt.
The true dec. to long. and lat.	2 24 South

When your equation to be ſubtracted, is greater than the declination anſwering your longitude, then ſubtract the declination from the ſaid equation, and to the difference prefix a contrary title, and you will have the true declination ſought, as in the laſt example.

And when the longitude or latitude comes not to even degrees, then take the parts proportionable, *&c.*

Thus have I endeavoured to explain the manner of finding declination, both by arithmetical calculation, and by plain and eaſy tables deduced therefrom; ſerving for the ſun in the ecliptick, and for the moon and ſtars, whoſe latitude exceed not ſix degrees, by having only their longitude and latitude given. It will be proper now to explain another very uſeful problem, quite reverſe from the former, *i. e.* by having the declinations of the ſun, to find his place in the eclip-tick, which take as follows.

To find the Longitude *of the* Sun, *having his greateſt and preſent* Declination.

RULE. T*O find this by aritmetical calculation obſerve, that as the ſine of the ſun's greateſt declination is to the radius, ſo is the ſign of his preſent declination to the ſine of his longitude ſought.*

EXAMPLE. *If the ſun be declined* 22° 24′ *North increaſing, what is his longitude?*

As ſine of greateſt dec. 23° 29′	9.600409
Is to the radius 90° —— —	10.000000
So is the ſine of his preſent declination, 22° 24′ North. ——	19.581005
To the ſine of longitude, 73° 0′.	9.980596

which, becauſe the declination in north increaſing, is reckoned from ♈ accounting 30° to a ſign, which will bring the longitude to 13° in ♊.

Note, that if the declination be north decreaſing, the ſign of longitude muſt be reckoned from ♎, if ſouth increaſing, likewiſe from ♎, if ſouth decreaſing from ♈, and it will bring you to the point required.

Of

Of the Right Aſcention, *&c.*

THE Right Aſcenſion of any point in the heavens, is its longitude in the meridian on the equinoctial, or that point of the equinox that comes to the ſouth, with the ſun or ſtars in any other part of heaven.

To find the Right Aſcention *of the* Sun *in any point of the* Ecliptick.

Rule. *The proportion is, as the radius* 90° *is to the tangent of his longitude from aries or libra, ſo is the co-ſine of his greateſt declination to the tangent of Right Aſcention.*

Example I. *What is the Right Aſcenſion of the ſun on June the* 14*th*, 1759 *ſun in* ♊ 20° 0′

As the radius ——— —	10.000000
Is to the tan. of diſtance from ♈ 83°	10.919856
So is the coſine of 23° 29′	9.962453
To the tan. of r. aſcen. 82° 22′ 30″	10.873309

Note. When you take your diſtance of longitude from ♎ towards ♑, add your R. Aſcention to 180°, but if towards ♋ ſubtract: and if from ♈ towards ♑, ſubtract your R. Aſcention from 360°, but if from ♈ towards ♋, as in this example, the number found is the true R. Aſcention.

EXAMPLE II. *What is the Right Aſcenſion of 23° in ♋?*

Radius	———	10.000000
Tan. 67° from ♎		10.372148
Coſ. 23° 29′		9.962453
Tan. of	65° 9′ 54″	10.334601
from which ſubtr.	80 0 0	
gives r. Aſc.	114° 50′ 6″	

But for thoſe who have occaſion to uſe the Right Aſcenſion of the ſun, &c. I have inſerted the following table:

A TABLE of *Right Aſcenſions, ſerving to every degree of the ecliptick.*

Degr.	♈	♎	♉	♏	♊	♐	♋	♑	♌	♒	♍	♓
°	°	'	°	'	°	'	°	'	°	'	°	'
0	0	00	27	54	57	49	90	0	122	11	152	6
1	0	55	28	52	58	51	91	5	123	14	153	3
2	1	50	29	49	59	54	92	11	124	16	154	0
3	2	45	30	47	60	57	93	16	125	18	154	57
4	3	40	31	45	62	0	94	22	126	20	155	54
5	4	35	32	43	63	3	95	27	127	22	156	51
6	5	30	33	41	64	6	96	32	128	23	157	47
7	6	26	34	39	65	10	97	37	129	24	158	44
8	7	21	35	37	66	14	98	43	130	26	159	40
9	8	16	36	36	67	17	99	48	131	26	160	36
10	9	11	37	35	68	21	100	53	132	27	161	32
11	10	7	38	34	69	25	101	58	133	28	162	28
12	11	2	39	33	70	30	103	3	134	28	163	24
13	11	57	40	32	71	34	104	8	135	28	164	20
14	12	53	41	32	72	38	105	12	136	29	165	16
15	13	49	42	32	73	43	106	17	37	28	166	12
16	14	44	43	31	74	48	107	22	138	28	167	7
17	15	40	44	31	75	52	108	26	139	28	168	3
18	16	36	45	32	76	57	109	30	140	27	168	58
19	17	32	46	32	78	2	110	35	41	26	169	53
20	18	28	47	33	79	7	111	39	142	25	170	49
21	19	24	48	33	80	12	112	43	143	24	171	44
22	20	20	49	34	81	17	113	46	144	23	172	39
23	21	16	50	36	82	22	114	50	145	21	173	34
24	22	12	51	37	83	28	115	54	146	19	174	30
25	23	9	52	38	84	33	116	57	147	17	175	25
26	24	6	53	40	85	38	118	0	148	15	176	20
27	25	3	54	42	86	44	119	3	149	13	177	15
28	26	0	55	44	87	49	120	6	150	11	178	10
29	26	57	56	46	88	55	121	9	51	8	179	5
30	27	54	57	49	90	0	122	11	152	6	180	0

USE *of the foregoing Table.*

Look for the ſign on the top, and the degree the firſt column on the left hand, and the com mo mon angle will give you the Right Aſcenſion of ♈, ♉, ♊, ♋, ♌, and ♍, the northern ſigns; and by adding 180 degrees, 'twill ſhew you the like for ♎, ♏, ♐, ♑, ♒, and ♓, the ſouthern ſigns.

EXAMPLE. *For* 10° *of* ♈, *the Right Aſcenſion is* 9° 11′, *to which add* 180° *makes* 189° 11′, *the Right Aſcenſion of* 10° *of* ♎; *the like is to be obſerved of the reſt.*

By the Right Aſcenſions *of the* Sun *and* Stars *to find the true time of their* Southing.

RULE. *From the Right Aſcenſion of the ſtar, ſubtract the Right Aſcenſion of the ſun, the remainder will be the ſtar's ſouthing in degrees, &c. which by allowing* 15 *degrees to an hour (and the reſt in proportion) will give the true time in hours and minutes.*

EXAMPLE I. *Find the time of ſouthing of the* ſeven ſtars, *the* 13*th day of* April *in any year*; ☉ *in* ♈ 24°. 7 *'s *in* ♉ 26° 33′. *Lat.* N. 4°.

From the right aſc. of the ſeven ſtars	53° 13′
Subtract the right aſc. of the ſun	22 13

The rem. divide by 15)31 (2 1-15th hours or
30

1 2 hours 4 min.

which ſhew their ſouthing at 4 minutes paſt 2 in the afternoon.

Note, If the ſtars right aſcenſion be leſs than that of the ſun, add thereto the circle, *viz.* 360°, from which ſum ſubtract the right aſcenſion of the ſun, and proceed as above: obſerve the ſame method in every ſection.

For the moon's ſouthing find her right aſcenſion as near as may be to the eſtimate time; becauſe of her ſwift motion: obſerve the like in her oblique aſcenſions for finding the true time of her riſing.

For the readier finding the time anſwering the degrees and minutes, of ſouthing, *&c.* obſerve the following table:

A TABLE *converting hours and minutes of time into degrees and minutes of the equator; and contrary.*

Hours.	Deg. in the Equat.	Min. of an H.	D&M. of the Equat.		Min. of an H.	D&M. of the Equat.	
1	15	1	0	15	31	7	45
2	30	2	0	30	32	8	0
3	45	3	0	45	33	8	15
4	60	4	1	0	34	8	30
5	75	5	1	15	35	8	45
6	90	6	1	30	36	9	0
7	105	7	1	45	37	9	15
8	120	8	2	0	38	9	30
9	135	9	2	15	39	9	45
10	150	10	2	30	40	10	0
11	165	11	2	45	41	10	15
12	180	12	3	0	42	10	30
13	195	13	3	15	43	10	45
14	200	14	3	30	44	11	0
15	225	15	3	45	45	11	15
16	240	16	4	0	46	11	30
17	255	17	4	15	47	11	45
18	270	18	4	30	48	12	0
19	285	19	4	45	49	12	15
20	300	20	5	0	50	12	30
21	315	21	5	15	51	12	45
22	330	22	5	30	52	13	0
23	345	23	5	45	53	13	15
24	360	24	6	0	54	13	30
		25	6	15	55	13	45
		26	6	30	56	14	0
		27	6	45	57	14	15
		28	7	0	58	14	30
		29	7	15	59	14	45
		30	7	30	60	15	0

USE *of the foregoing Table.*

When your number of degrees amount to more than 15, enter the ſecond column, and directly oppoſite in the firſt, you have the hours anſwering thereto.

But if leſs than 15, enter the fourth or ſixth columns, againſt which, in the third or fifth, is ſhewn the minutes of an hour.

In the foregoing example, for finding the ſouthing of the ſeven ſtars, I find the difference of right aſcenſions, 31 degrees; then inſtead of dividing by 15, I look the nigheſt number under 31 in the ſecond column, which is 30, anſwering 2 hours in the firſt, then I ſubtract 30 from 31, and remains 1 degree, with which I enter the table in the fifth column, and in the fourth is four minutes anſwering thereto; ſo I find the ſouthing at four minutes paſt 2 as before. *See the work.*

Example I. *Difference of right aſcenſions,*

	31°
2 hours or	30 ſubtract
4 minutes	1

Example II. *Find the time of* Sirius's *ſouthing on the firſt day of January, in any year,* ☉ *in* ♑ 11 *degrees.* Sirius *in* ♋ 10° 33′. *Lat. S.* 39° 32′.

Right

Right aſcenſion of Sirius	98°	34′
add the circle ———	360	0
ſum	458	34 from which
ſub. the r. aſc. of the ſun	281	58
remainder	176	36
11 hours	165	0
	11	36
36 minutes	11	30
24″		6

Thus I find Sirius (or the Dog-ſtar) ſouths at 46 minutes after 11 at night.

Of the Aſcenſional Difference.

IT is an arch of the equinoctial, contained between the right and oblique aſcenſions, or difference of time between the ſun riſing and ſix o'Clock.

To find the Aſcenſional Difference.

Rule. *Find the latitude of your place and declination of the point required; then, as the co-tangent of latitude is to the radius, ſo is the tangent of declination, to the ſine of Aſcenſional Difference.*

EXAMPLE. *What is the ſun's Aſcenſional Difference in the tropicks, in the latitude* 51 *degrees* 32 *minutes, his declination* 23 *degrees* 29 *minutes?*

As co-tangent of lat.	51° 32′	9.900087
is to radius	——— ———	10.000000
So is tang. of dec.	23° 29′	9.637956
to ſine of Aſcenſional Diff.	33° 9′	9.737869

Note. When your declination is north, the Aſcenſional Difference will be north, as in the tropick of cancer; and ſouth, as in the tropick of capricorn.

By the Aſcentional Difference we find the ſun's riſing and ſetting, length of days, *&c.* for any time in the year, as follows:

RULE I. *By the foregoing table (or otherwiſe) convert the Aſcenſional Difference into hours and minutes of the equator.*

II. *If the ſun's declination be north, the Aſcenſional Difference added to ſix hours, gives the time of ſun-ſetting, and ſubtracted, the time of ſun-riſing.*

III. *If the declination be ſouth, the Aſcenſional Difference added ſhews the time of ſun-riſing, and ſubtracted, the time of ſun-ſetting.*

IV. *Double the hours and minutes of ſun-ſetting, gives the length of the day; and of ſun-riſing the length of the night.*

EXAMPLE. *What are the times of ſun-riſing, ſetting, and length of day and night, on the 22d day of June, in the latitude of Cirenceſter,* 52° 41′. *declination* 23° 29′ *north?*

As co-tang. of lat. 51° 41′ 9.897751

to radius —— —— 10.000000
ſo is tang. of dec. 23° 29′ 9 637956

to ſine of Aſc. Diff. 23° 21′ N. 9.740205
2 hours 30 0
converted into time is { 3 21
13 min. 3 15
24 moments 6

1. Which added to 6 hours make 8 hours, 13 minutes, 24 ſeconds, the time of ſun-ſetting.

2. Subtracted from 6 hours leaves 3 hours, 46 minutes, 36 ſeconds, the time of ſun-riſing.

3 Double 8 hours, 13 minutes, 24 ſeconds, make 16 hours, 26 minutes, 48 ſeconds, the length of the day.

4. Double 3 hours, 46 minutes, 36 ſeconds, make 7 hours, 33 minutes, 12 ſeconds, the length of the Night.

Thus eaſily I find when Sol *will riſe*
With lucid beams t'illuminate our Skies;
Alſo the time when he will diſappear,
And cloath in ſable night our hemiſphere.

Of Oblique Aſcenſions *and* Deſcenſions.

OBlique Aſcenſion is that point of the equinoctial, riſing with the ſun or ſtars, as

The Oblique Deſcenſion is a point of the equinoctial, ſetting with the ſun or ſtars.

To find the Oblique Aſcenſions *and* Deſcenſions.

RULE. *The Right Aſcenſion and Aſcenſional Difference, muſt be firſt found, as before taught.*

Then if the declination be north, the aſcenſional defference ſubtracted from the right aſcenſion, gives the Oblique aſcenſion, and added thereto gives the Oblique Deſcenſion.

But if the declination be ſouth, the aſcenſional difference added to the right aſcenſion, gives the Oblique aſcenſion; and ſubtracted, the Oblique Deſcenſion.

EXAMPLE. *Given the aſcenſional difference,* 32° 58′, *north declination; the right aſcenſion,* 81° 57′; *to find the Oblique Aſcenſion and Deſcenſion.*

R. aſcenſion	81°	57′	
Aſc. diff.	32	58	ſubtract and add
Obl. Aſc.	48	59	
Obl. Deſcen.	114	55.	

By Oblique Aſcenſion and Deſcenſion, are found the riſing and ſetting of the ſtars.

To find their Riſing *and* Setting.

Rule. *From the Oblique Aſcenſion of the ſtar, ſubtract the right aſcenſion of the ſun, if the remainder exceed 90 degrees (in time 6 hours) take the overplus; but if leſs than 90 degrees, then to the remainder add 6 hours; ſo the ſum or difference will be the exact time of riſing.*

Obſerve the ſame method by the Oblique Deſcenſion for the true time of ſetting.

Example. *Let it be required to find the time of riſing and ſetting of the dog-ſtar, on the firſt day of January, in latitude 51° 41′ north.*

Oblique Aſc. of Sirius	120°	23′	
add the circle	360	0	
	480	23	from which
ſubtract the ſun's r. aſc.	281	58	
	198	25	from which
ſubtract 90 degrees	90		
	108	25	
converted into time is { 7 hours	105		
14 min.	3	25	

By this I find the dog-ſtar to riſe, 14 minutes after 7 at night.

For ſetting obſerve,

Obl. Deſc. of Sirius	76°	45′	
add the circle	360		
	436	45	from which
ſubtract ſun's r. aſc.	281	58	
	154	47	from which
take 90 degrees	90		
	64	47	
4 hours	60		
19 minutes	4	47	

The dog-ſtar ſets 19 minutes paſt 4 in the morning.

Of Amplitude.

AMplitude is an arch of the horizon, intercepted between the eaſt and weſt points of it, and the center of the ſun or ſtars at their riſing and ſetting, and is accounted northern or ſouthern.

To find the Amplitude *of the* Sun *or* Stars.

RULE. *As the co-ſine of latitude is to the radius, ſo is the ſine of declination to the ſine of Amplitude.*

EXAMPLE. *What is the ſun's Amplitude when in the tropick of cancer, with declination 23° 29′, north; in latitude 51° 32′, north?*

As co-ſine of 51° 32′ ——	9.793832
to radius —— ——	10.000000
So is ſine of 23° 29′ ——	9.600409
to ſine of amplitude, 39° 50′, north	9.806577

Of the Altitude *of the* Sun *and* Stars.

BY Altitude, we ſignify the height of the ſun, moon, and ſtars above the horizon.

It is uſed to find the moon's apparent place in eclipſes, *&c.* and to find the azimuths in dialling.

To find the Sun's Meridian Altitude, *or* Height *at* Noon.

RULE. *If his declination be north, add, or ſouth, ſubtract it from the complement of latitude; and the remainder is the Meridian Altitude.*

EXAMPLE. *Find the ſun's Meridian Altitude when in ♎ 27° with 10° 25′, ſouth declination.*

The latitude of Cirenceſter is	51°	41′ North
The complement of which is	38	19 fr. which
Subtract ſouth declination	10	25
The meridian Altitude	27	54

Note. To find the complement of latitude, o of any other denomination, is only to ſubtrac your given number from 90°. the remainde is the complement thereof; as in the laſt example, 51° 41′. the latitude ſubtracted fro 90 leave 38° 19′, the complement of latitud

To find the Sun's Altitude *at ſix o'Clock, the* Latitude *and* Declination *given.*

Rule. *As the radius to the ſine of declination; ſo is the ſine of latitude to the ſine of Altitude.*

Example. *The latitude* 51° 41′, *declination o the ſun,* 20° *north, the Altitude required.*

As radius	10.000000
To the ſine 20°	9.534052
So is the ſine of 51° 41′	9.894646
To the ſine of Altitude 15° 34′	9.428698

To find the Sun's Altitude *at any time of the day.*

Rule 1. *As the radius to the co-tangent of latitude, ſo is the ſine of the ſun's diſtance from ſix o'clock to the tangent of an arch, which being ſub-*

tracted out of the ſun's diſtance from the pole; then,

2. *As the co-ſine of the arch found, is to the co-ſine of the reſidue of the ſun's diſtance from the pole; ſo is the ſine of latitude to the ſine of the altitude required.*

EXAMPLE. *Find the ſun's altitude on the 13th of June,* 1760, *at* 17 *minutes paſt* 8 *in the morning; given the ſun's declination* 23° 17′ *north*

then firſt, as radius	——	10.000000
To the co-tang. of lat. 51° 41′		9 897751
So is the ſine of the ſun's diſtance Fr. 6 (2 h. 17 m.) in deg. 34° 15′		9.750358
To the tang. of an arch 23° 59′		9.648109

Then from	90°	0′	diſt. of pole and equinoct.
Subtract	23	17	ſun's declination north
Remains	66	43	diſt. of ſun and north pole
fr. which take	23	59	the arch found
Reſidue	42	44	

2dly. As co-ſine of the arch found 23° 59′ ——	9.960786
To the co-ſine of reſidue, 42° 44′	9.866004
So is the ſine of latitude, 51° 41′	9.894646
	19.760650
To the ſine of Altitude, 39° 6′	9.799864

Thus I find the ſun's height above the horizon, 39 degrees 6 minutes.

Of the Azimuths.

AZimuths are great circles paſſing throug every point of the horizon at right angles, and interſecting each other in the Zenith (o point over our heads) and Nadir (or point unde our feet.)

They are numbered from the north and ſout points of the horizon, towards the eaſt and weſt.

Their uſe is in making dials, therefore nee no farther explanation in this place.

Of Parallel Circles.

THeſe are ſmall circles equally diſtant fron ſome great one; as parallels of latitud from the equator; parallels of altitude from th horizon, and parallels of longitude from the meridian.

An Explanation of ſeveral Aſtronomical *term uſed in this book.*

A*Nomaly*, is the arch or diſtance between th place of a planet and his aphelion or apoge

Aphelion, that point of the earth, or any othe planet, in which it is fartheſt diſtant from the ſun

Apogee, that point of the moon's orb that is fartheſt diſtant from the earth.

Equation, is the difference between the mean and true motion of any planet.

Mean or *Middle Motion*, is an equal diviſion of the planet's periods, ſo as to allot the ſame quantity of motion for one day as for another.

Orb or *Orbit*, the ſphere of any planet in which it moves.

Node Aſcending, is the point where the orb of the moon or planet croſſeth the ecliptick, as it paſſes from ſouth to north latitude.

Node Deſcending, the point where the planets deſcend from north to ſouth latitude.

Latitude of the planets, is their diſtance from the ecliptick, either north or ſouth.

Note, If you add the mean anomaly and aphelion of the planets (or apogee of the moon) together, the ſum will be the middle longitude, *et contra*.

I will now proceed to lay down exact and eaſy rules for calculating the ſun's true longitude, whoſe place muſt be firſt known, before you can form a true calculation of the other planetary bodies.

A TABLE *of the* Abſolute Equation *of the* Sun, *to every day of the year, anſwering every fourth year.*

Days	January.			February.			March.			April.			May.			June.		
	′	″	‴	′	″	‴	′	″	‴	′	″	‴	′	″	‴	′	″	‴
1	1	44	41	1	45	28	1	47	11	1	49	29	1	51	40	1	53	14
2	1	44	41	1	45	31	1	47	15	1	49	34	1	51	44	1	53	16
3	1	44	42	1	45	34	1	47	19	1	49	39	1	51	48	1	53	18
4	1	44	42	1	45	37	1	47	24	1	49	44	1	51	52	1	53	20
5	1	44	43	1	45	40	1	47	28	1	49	48	1	51	56	1	53	21
6	1	44	44	1	45	43	1	47	32	1	49	53	1	51	59	1	53	23
7	1	44	45	1	45	46	1	47	37	1	49	57	1	52	2	1	53	24
8	1	44	46	1	45	49	1	47	41	1	50	2	1	52	5	1	53	26
9	1	44	47	1	45	53	1	47	46	1	50	7	1	52	8	1	53	27
10	1	44	48	1	45	56	1	47	50	1	50	11	1	52	12	1	53	29
11	1	44	49	1	46	0	1	47	55	1	50	16	1	52	16	1	53	30
12	1	44	50	1	46	4	1	47	59	1	50	20	1	52	19	1	53	31
13	1	44	51	1	46	8	1	48	3	1	50	25	1	52	22	1	53	32
14	1	44	52	1	46	11	1	48	8	1	50	29	1	52	25	1	53	33
15	1	44	54	1	46	14	1	48	12	1	50	34	1	52	28	1	53	34
16	1	44	55	1	46	18	1	48	17	1	50	38	1	52	30	1	53	35
17	1	44	56	1	46	22	1	48	21	1	50	42	1	52	33	1	53	36
18	1	44	58	1	46	26	1	48	26	1	50	46	1	52	36	1	53	37
19	1	44	59	1	46	30	1	48	30	1	50	50	1	52	39	1	53	37
20	1	45	1	1	46	34	1	48	35	1	50	55	1	52	42	1	53	38
21	1	45	2	1	46	38	1	48	39	1	50	59	1	52	45	1	53	39
22	1	45	4	1	46	42	1	48	44	1	51	4	1	52	48	1	53	39
23	1	45	6	1	46	46	1	48	48	1	51	8	1	52	51	1	53	40
24	1	45	8	1	46	50	1	48	53	1	51	12	1	52	54	1	53	41
25	1	45	10	1	46	55	1	48	58	1	51	16	1	52	57	1	53	41
26	1	45	12	1	46	59	1	49	2	1	51	20	1	53	0	1	53	42
27	1	45	15	1	47	3	1	49	7	1	51	24	1	53	2	1	53	42
28	1	45	17	1	47	7	1	49	11	1	51	28	1	53	4	1	53	42
29	1	45	19	1	47	9	1	49	16	1	51	32	1	53	7	1	53	43
30	1	45	22	uſe this in			1	49	20	1	51	36	1	53	9	1	53	42
31	1	45	25	leap year.			1	49	25				1	53	11			

USE *of theſe Tables.*

To calculate the ſun's true place by theſe tables, is no more than this, 1ſt, in this book, or an ephemeris for four years before *that* you would calculate for look the ſun's place, to which according to the day and month

A TABLE *of the* Abſolute Equation *of the* Sun, *to every day in the year, anſwering every fourth year.*

Days	July			Auguſt			Septemb.			October			November			December		
	′	″	‴	′	″	‴	′	″	‴	′	″	‴	′	″	‴	′	″	‴
1	1	53	42	1	53	7	1	51	29	1	49	17	1	47	0	1	45	15
2	1	53	43	1	53	5	1	51	25	1	49	12	1	46	56	1	45	13
3	1	53	42	1	53	2	1	51	21	1	49	8	1	46	51	1	45	11
4	1	53	42	1	53	0	1	51	17	1	49	4	1	46	47	1	45	9
5	1	53	41	1	52	58	1	51	12	1	48	59	1	46	43	1	45	7
6	1	53	41	1	52	55	1	51	8	1	48	54	1	46	39	1	45	5
7	1	53	40	1	52	52	1	51	4	1	48	50	1	46	35	1	45	3
8	1	53	39	1	52	49	1	51	0	1	48	45	1	46	31	1	45	1
9	1	53	39	1	52	46	1	50	56	1	48	40	1	46	27	1	45	0
10	1	53	38	1	52	43	1	50	51	1	48	35	1	46	23	1	44	59
11	1	53	37	1	52	40	1	50	47	1	48	31	1	46	19	1	44	58
12	1	53	37	1	52	37	1	50	43	1	48	26	1	46	15	1	44	56
13	1	53	36	1	52	34	1	50	39	1	48	22	1	46	12	1	44	55
14	1	53	35	1	52	31	1	50	35	1	48	17	1	46	9	1	44	54
15	1	53	34	1	52	28	1	50	31	1	48	13	1	46	5	1	44	52
16	1	53	33	1	52	25	1	50	26	1	48	8	1	46	2	1	44	51
17	1	53	32	1	52	22	1	50	21	1	48	4	1	45	58	1	44	50
18	1	53	31	1	52	19	1	50	17	1	48	0	1	45	55	1	44	49
19	1	53	30	1	52	16	1	50	12	1	47	56	1	45	51	1	44	48
20	1	53	29	1	52	13	1	50	8	1	47	52	1	45	47	1	44	47
21	1	53	28	1	52	10	1	50	3	1	47	47	1	45	44	1	44	46
22	1	53	26	1	52	6	1	49	58	1	47	43	1	45	41	1	44	45
23	1	53	25	1	52	3	1	49	54	1	47	38	1	45	38	1	44	44
24	1	53	23	1	52	0	1	49	50	1	47	34	1	45	35	1	44	43
25	1	53	22	1	51	57	1	49	46	1	47	29	1	45	32	1	44	42
26	1	53	20	1	51	53	1	49	42	1	47	25	1	45	29	1	44	42
27	1	53	18	1	51	49	1	49	37	1	47	21	1	45	26	1	44	41
28	1	53	16	1	51	45	1	49	32	1	47	17	1	45	23	1	44	41
29	1	53	14	1	51	41	1	49	27	1	47	13	1	45	20	1	44	40
30	1	53	12	1	51	37	1	49	22	1	47	9	1	45	18	1	44	41
31	1	53	9	1	51	33				1	47	4				1	44	41

month given in this table add the equation there found, which gives you the ſun's true place for that time alſo.

2dly. If you would calculate the ſun's place for four years paſt, look your numbers as before directed, only inſtead of adding you muſt ſubtract your equation, and it will give you a true anſwer.

Here let it be obſerved, that all aſtronomers begin their days at noon, numbering the hours to the noon of the following day from 1 to 24, thus 1 o'clock in the morning (as 'tis commonly called) is the 13th hour from the noon of the preceding day.

Of the Four Quarters *of the* Year.

AS it is the ſun that meaſureth the day by giving light, ſo doth he point out the ſeaſons of the year by his revolution in the ecliptick; by ſuch conſtant viciſſitudes, nature is preſerved in the order we behold it; and the melancholy ſcenes of winter ſerve to make us more chearful when we receive the blooming ſpring.

When I ſurvey thy works O God,
Thy wiſdom I admire;
I'll meditate both day and night
'Till time with me expire.

Of the Spring Quarter.

THE Spring Quarter commenceth at ſuch time as the ſun touches the firſt ſcruple of the equinoctial ſign aries, making our day and night of equal length. The ſun has now neither declination, amplitude nor right aſcenſion, his meridian altitude in the latitude of Cirenceſter, is 38° 19′.

To find the Commencement *of the* Spring Quarter.

Rule. *Find the time of entrance four years preceding your year given, from which ſubtract* 44 *minutes, the remainder will be the time required.*

Example. *In the year* 1754, *the equal time of beginning the ſpring quarter was on March the* 20*th*, 24 *minutes paſt* 4 *in the afternoon, from which ſubtract* 44 *minutes, leaves* 40 *minutes paſt* 3, *the time of beginning the ſpring quarter in the year* 1758.

A TABLE *of the* Commencement *of the* Spring Quarters *for* ſeven years.

Years of Chriſt.	Biſſ.	To equal Time.				Sun's M. anomaly		
		Mon.	D.	H.	M.	Sign	°	′
1755	3	Mar.	20	10	13	8	19	31
1756	B		19	16	2	8	19	30
1757	1		19	21	51	8	19	29
1758	2		20	3	40	8	19	28
1759	3		20	9	29	8	19	27
1760	B		19	15	18	8	19	26
1761	1		19	21	7	8	19	25

If you ſubtract 8 minutes from the equal, it will give you the apparent time.

In verdant hue the meads and trees appear,
The champion fields rich flower'd garments wear,
The ſeaſon ſeems deſign'd by providence,
For man's delight to cheriſh every ſenſe;
But too regardleſs of ſuch bounty, he
By ſin deſtroy his own felicity.

Of

Of the Summer Quarter.

Summer begins with us, when the ſun enters the tropical ſign of cancer, conſtituting our longeſt day and ſhorteſt night: to thoſe living 900 miles more north, the ſun appears not to ſet at this time.

To find the beginning of the Summer Quarter.

Rule. *Subtract* 48 *minutes from the time, four years before your given year.*

Example. *In the year* 1754, *the equal time of beginning the ſummer quarter was June the* 21*ſt*, 21 *min. paſt* 3 *in the afternoon; from which ſubtract* 48 *min. will leave* 33 *min. paſt* 2 *in the year* 1758.

A TABLE *ſhewing the entrance of the* Summer Quarters *for ſeven years.*

Years of Chriſt.	Biſſ.	Equal Time.				Sun's M. anomaly		
		Mon.	D.	H.	M.	Signs	°	'
1755	3	June	21	9	9	11	21	8
1756	B		20	14	57	11	21	7
1757	1		20	20	45	11	21	6
1758	2		21	2	33	11	21	5
1759	3		21	8	21	11	21	4
1760	B		20	14	9	11	21	3
1761	1		20	19	57	11	21	2

Subtract 1 min. for apparent time.

The fruitful fields by yielding crops provide
For man and beaſt while they on earth abide.
How richly is our native country bleſt
With nouriſhment, and plenty of the beſt.

Of the Autumn Quarter.

THis Quarter commenceth at ſuch time as the ſun enters the equinoctial ſign libra, once more equalizing our day and night.

To find the Commencement *of the* Autumn Quarter.

RULE. *From the time of entrance four years before, ſubtract* 44 *minutes* 12 *ſeconds, and you will have the true time required.*

EXAMPLE. *In the year* 1754, *Autumn begins September the* 23*d*, 40 *min. after* 4 *in the morning, from which ſubtract* 44 *min. &c. will leave* 56 *min. after* 3, *in the year* 1758.

A TABLE *ſhewing the commencement of the* Autumn Quarters *for ſeven years.*

Years of Chriſt.	Biſſ.	Equal Time. Mon.	D.	H.	M.	Sun's M. anomaly Signs	°	'
1755	3	Sept.	22	22	29	2	23	21
1756	B		22	4	18	2	23	20
1757	1		22	10	7	2	23	19
1758	2		22	15	56	2	23	18
1759	3		22	21	44	2	23	17
1760	B		22	3	33	2	23	16
1761	1		22	9	22	2	23	15

Add 8 minutes for apparent time.

Now Autumn bids us all prepare
To ſtand cold Hyem's rage;
All pleaſant objects diſappear,
A while from off the ſtage.
Happy's the man whom God hath lent
A little portion with content.

Of the Winter Quarter.

WInter begins when the ſun enters the tropical ſign capricorn; our days are now ſhorteſt and nights longeſt.

To find the Beginning *of the* Winter Quarter.

RULE. *From the beginning of this quarter, four years preceding the year you enquire for, ſubtract* 40 *minutes, and you have your deſire.*

EXAMPLE. *In the year* 1754, *Winter begins December the* 21*ſt,* 17 *minutes paſt* 8 *at night, from which ſubtract* 40 *minutes, and you have* 37 *minutes after* 7 *in the year* 1758.

A TABLE *ſhewing the entrance of the* Winter Quarter *for* ſeven Years.

Years of Chriſt.	Biſſ.	Equal Time.				Sun's M. Anomaly		
		Mon.	D.	H.	M.	Signs	°	'
1755	3	Dec.	21	14	7	5	21	42
1756	B		20	19	57	5	21	41
1757	1		21	1	47	5	21	40
1758	2		21	7	37	5	21	39
1759	3		21	13	27	5	21	38
1760	B		20	19	16	5	21	37
1761	1		21	1	6	5	21	36

For apparent time add 1 minute.

Sol's rays oblique to us declare
The time and ſeaſon of the year.
High rugged winds with froſt and ſnow
Is weather common to us now;
The earth is ſtript of the attire
Which we in ſummer time admire.

Thus 'tis with man, whoſe vigour paſt,
Cold winter, age, his pleaſures blaſt.
Conſider man but what thou art,
And let not pride ſo fill thy heart;
Come view the ſeaſons of the year,
Thy life to them thou may'ſt compare;
And as they quickly paſs away,
So do thy ſtrength and life decay.

A TABLE *for computing the* New *and* Full Moons *&c. after the period of* 18 *years,* 11 *days, according to the Sun's motion.*

M.	D.	H.	M.	M.	D.	H.	M.	M.	D.	H.	M.	M.	D.	H.	M.
Jan.	1	8	30	Apr.	1	7	38	July	1	6	58	Oct.	1	7	47
	6	8	29		6	7	34		6	6	59		6	7	51
	11	8	28		11	7	30		11	6	59		11	7	55
	16	8	27		16	7	26		16	7	0		16	7	59
	21	8	25		22	7	22		21	7	2		21	8	3
	26	8	23		26	7	19		26	7	4		26	8	6
Feb.	1	8	20	May	1	7	16	Aug.	1	7	6	Nov.	1	8	10
	6	8	17		6	7	13		6	7	8		6	8	14
	11	8	14		11	7	10		11	7	11		11	8	17
	16	8	11		16	7	8		16	7	14		16	8	20
	21	8	7		21	7	5		21	7	17		21	8	22
	26	8	4		26	7	3		26	7	20		26	8	24
Mar.	1	8	1	June	1	7	1	Sept.	1	7	24	Dec.	1	8	26
	6	7	57		6	7	0		6	7	27		6	8	27
	11	7	54		11	6	59		11	7	31		11	8	28
	16	7	50		16	6	58		16	7	35		16	8	29
	21	7	46		21	6	58		21	7	39		21	8	30
	26	7	42		26	6	58		26	7	43		26	8	30

USE *of the foregoing Table.*

Obſerve the time of lunation in an ephemeris, 18 years foregoing, to which, according to the day of the month, add 11 days, and the hours and minutes anſwering thereto, will give you the time required.

Note. If your period has in it 5 leap-years, inſtead of 11 add 10 days: It muſt alſo be obſerved, that 11 days more be added on account of the alteration of the Style 'till after September, 1770.

For an example ſee the ſection of the moon.

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1755.

Days	January.			February.			March.			April.			May.			June.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	10	51	48	12	24	37	10	38	32	11	25	55	10	43	0	10	32	27
2	11	52	59	13	25	26	11	38	38	12	24	57	11	41	6	11	29	50
3	12	54	9	14	26	14	12	38	41	13	23	57	12	39	9	12	27	13
4	13	55	19	15	27	5	13	38	42	14	22	58	13	37	10	13	24	35
5	14	56	29	16	27	48	14	38	42	15	21	55	14	35	10	14	21	56
6	15	57	39	17	28	32	15	38	41	16	20	49	15	33	10	15	19	17
7	16	58	49	18	29	15	16	38	37	17	19	41	16	31	8	16	16	38
8	17	59	59	19	39	57	17	38	30	18	18	32	17	29	3	17	13	57
9	19	1	8	20	30	37	18	38	21	19	17	20	18	26	57	18	11	15
10	20	2	17	21	31	16	19	38	11	20	16	7	19	24	50	19	8	33
11	21	3	25	22	31	53	20	37	59	21	14	52	20	22	41	20	5	50
12	22	4	33	23	32	30	21	37	45	22	13	34	21	21	29	21	3	6
13	23	5	40	24	33	4	22	37	29	23	12	15	22	18	17	22	0	22
14	24	6	46	25	33	37	23	37	11	24	10	54	23	16	4	22	57	38
15	25	7	52	26	34	9	24	36	51	25	9	31	24	13	49	23	54	53
16	26	8	58	27	34	39	25	36	29	26	8	5	25	11	33	24	52	8
17	27	10	3	28	35	7	26	36	5	27	6	37	26	9	15	25	49	22
18	28	11	7	29	35	34	27	35	39	28	5	8	27	6	56	26	46	35
19	29	12	11	♓	35	59	28	35	11	29	3	37	28	4	36	27	43	48
20	♒	13	14	1	36	22	29	35	4	♉	2	5	29	2	15	28	41	0
21	1	14	16	2	36	43	♈	34	8	1	0	31	29	59	53	29	38	12
22	2	15	17	3	37	3	1	33	34	1	58	52	♊	57	29	♋	35	24
23	3	16	17	4	37	21	2	32	57	2	57	13	1	55	4	1	32	36
24	4	17	16	5	37	38	3	32	18	3	55	33	2	52	37	2	29	48
25	5	18	14	6	37	53	4	31	38	4	53	51	3	50	9	3	27	0
26	6	19	11	7	38	6	5	30	56	5	52	7	4	47	40	4	24	12
27	7	20	8	8	38	17	6	30	11	6	50	21	5	45	10	5	21	23
28	8	21	4	9	38	25	7	29	24	7	48	33	6	43	39	6	18	34
29	9	22	0				8	28	35	8	46	44	7	40	7	7	15	44
30	10	22	54				9	27	44	9	44	53	8	37	35	8	12	54
31	11	23	46				10	26	51				9	35	4			

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1755.

Days	July.			Auguſt.			Septemb.			October.			Novemb.			Decemb.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	9	10	4	8	45	28	8	36	30	7	55	45	8	45	28	9	2	51
2	10	7	14	9	42	56	9	34	41	8	54	55	9	45	40	10	3	47
3	11	4	25	10	40	25	10	32	53	9	54	7	10	45	53	11	4	45
4	12	1	36	11	37	55	11	31	8	10	53	20	11	46	8	12	5	43
5	12	58	48	12	35	55	12	29	24	11	52	35	12	46	25	13	6	42
6	13	56	0	13	32	56	13	27	43	12	51	52	13	46	14	14	7	41
7	14	53	12	14	30	28	14	26	3	13	51	12	14	47	4	15	8	41
8	15	50	24	15	28	1	15	24	25	14	50	34	15	47	26	16	9	42
9	16	57	36	16	25	36	16	22	48	15	50	0	16	47	49	17	10	44
10	17	44	48	17	23	12	17	21	14	16	49	26	17	48	14	18	11	47
11	18	42	0	18	20	50	18	19	42	17	48	54	18	48	41	19	12	51
12	19	39	12	19	18	29	19	18	12	18	48	23	19	49	10	20	13	55
13	20	36	25	20	16	9	20	16	43	19	47	55	20	49	41	21	15	0
14	21	33	38	21	13	51	21	15	16	20	47	30	21	50	13	22	16	6
15	22	30	52	22	11	34	22	13	51	21	47	6	22	50	46	23	17	12
16	23	28	6	23	9	18	23	12	28	22	46	45	23	51	21	24	18	19
17	24	25	21	24	7	4	24	11	7	23	46	26	24	51	57	25	19	26
18	25	22	37	25	4	51	25	9	48	24	45	8	25	52	35	26	20	34
19	26	19	53	26	2	39	26	8	31	25	45	52	26	53	15	27	21	42
20	27	17	10	27	0	28	27	7	16	26	45	38	27	53	56	28	22	51
21	28	14	28	27	58	19	28	6	3	27	45	27	28	54	38	29	24	1
22	29	11	46	28	56	12	29	4	52	28	45	17	29	55	22	♑	25	11
23	♌	9	5	29	54	7	♎	3	43	29	45	9	♐	56	7	1	26	21
24	1	6	24	♍	52	3	1	2	36	♏	45	3	1	56	52	2	27	31
25	2	3	44	1	50	1	2	1	31	1	44	59	2	57	39	3	28	41
26	3	1	5	2	48	0	3	0	28	2	44	58	3	58	28	4	29	51
27	3	58	27	3	46	1	3	59	27	3	44	59	4	59	18	5	31	1
28	4	55	50	4	44	3	4	58	28	4	45	1	6	0	9	6	32	12
29	5	53	13	5	42	7	5	57	32	5	45	5	7	1	1	7	33	23
30	6	50	37	6	40	13	6	56	38	6	45	11	8	1	54	8	34	34
31	7	48	2	7	38	21				7	45	18				9	35	45

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1756.

Days	January.			February.			March.			April.			May.			June.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	10	36	56	12	9	49	11	24	4	12	10	41	11	27	3	11	15	57
2	11	38	7	13	10	39	12	24	8	13	9	42	12	25	7	12	13	21
3	12	39	18	14	11	28	13	24	10	14	8	41	13	23	9	13	10	44
4	13	40	28	15	12	16	14	24	10	15	7	38	14	21	9	14	8	6
5	14	41	38	16	13	3	15	24	8	16	6	33	15	19	8	15	5	26
6	15	42	48	17	13	48	16	24	4	17	5	26	16	17	5	16	2	46
7	16	43	58	18	14	32	17	23	59	18	4	17	17	15	1	17	0	5
8	17	45	8	19	15	14	18	23	52	19	3	16	18	12	56	17	57	24
9	18	46	17	20	15	55	19	23	43	20	1	53	19	10	49	18	54	42
10	19	47	26	21	16	24	20	23	31	21	0	38	20	8	41	19	51	59
11	20	48	34	22	17	12	21	23	17	21	59	21	21	6	31	20	49	16
12	21	49	42	23	17	48	22	23	1	22	58	3	22	4	19	21	46	32
13	22	50	49	24	18	23	23	22	43	23	56	42	23	2	6	22	43	47
14	23	51	56	25	18	56	24	22	23	24	55	19	23	59	52	23	41	1
15	24	53	2	26	19	28	25	22	2	25	53	54	24	56	36	24	38	17
16	25	54	8	27	19	58	26	21	39	26	52	27	25	55	19	25	35	31
17	26	55	13	28	20	27	27	21	14	27	50	58	26	53	0	26	32	45
18	27	56	17	29	20	54	28	20	46	28	49	27	27	50	40	27	29	58
19	28	57	21	♓	21	19	29	20	16	29	47	55	28	48	19	28	27	11
20	29	58	24	1	21	43	♈	19	44	♉	46	21	29	45	58	29	24	23
21	♒	59	26	2	22	5	1	19	10	1	44	45	♊	43	24	♋	21	35
22	2	0	27	3	22	25	2	18	34	2	43	7	1	41	9	1	18	47
23	3	1	27	4	22	44	3	17	56	3	41	26	2	38	43	2	15	59
24	4	2	27	5	23	1	4	17	16	4	39	44	3	36	15	3	13	11
25	5	3	25	6	23	16	5	16	34	5	38	0	4	33	46	4	10	22
26	6	4	23	7	23	29	6	15	50	6	36	15	5	31	16	5	7	33
27	7	5	20	8	23	40	7	15	3	7	34	28	6	28	45	6	4	44
28	8	6	16	9	23	50	8	14	14	8	32	39	7	26	13	7	1	55
29	9	7	11	10	23	58	9	13	24	9	30	49	8	23	40	7	59	6
30	10	8	5				10	12	32	10	28	57	9	21	6	8	56	16
31	11	8	58				11	11	38				10	18	32			

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1756.

Days	July.			Auguſt.			Septemb.			October.			Novemb.			Decemb.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	9	53	26	9	29	2	9	20	36	8	40	34	9	31	5	9	49	0
2	10	50	37	10	26	30	10	18	48	9	39	46	10	31	16	10	49	57
3	11	47	48	11	23	39	11	17	2	10	38	59	11	31	30	11	50	55
4	12	44	59	12	21	29	12	15	18	11	38	14	12	31	46	12	51	54
5	13	42	10	13	19	0	13	13	36	12	37	31	13	32	4	13	52	53
6	14	39	21	14	16	32	14	11	56	13	36	50	14	32	24	14	53	53
7	15	36	33	15	14	6	15	10	17	14	36	11	15	32	46	15	54	54
8	16	33	45	16	11	41	16	8	40	15	35	34	16	33	9	16	55	56
9	17	30	57	17	9	17	17	7	5	16	35	0	17	33	34	17	56	59
10	18	28	9	18	6	54	18	5	32	17	34	28	18	34	1	18	58	2
11	19	25	22	19	4	53	19	4	1	18	33	58	19	34	29	19	59	6
12	20	22	35	20	2	13	20	2	32	19	33	30	20	34	59	21	0	11
13	21	19	48	20	59	54	21	1	5	20	33	4	21	35	30	22	1	16
14	22	17	2	21	57	36	21	59	40	21	32	39	22	36	3	23	2	22
15	23	14	17	22	55	20	22	58	16	22	32	17	23	36	38	24	3	29
16	24	11	32	23	53	5	23	56	54	23	31	57	24	37	14	25	4	36
17	25	8	47	24	50	52	24	55	34	24	31	39	25	37	52	26	5	44
18	26	6	3	25	48	40	25	54	16	25	31	23	26	38	31	27	6	52
19	27	3	19	26	46	29	26	53	1	26	31	9	27	39	11	28	8	1
20	28	0	36	27	44	20	27	51	48	27	30	57	28	39	53	29	9	10
21	28	57	54	28	42	13	28	50	37	28	30	47	29	40	36	♑	10	19
22	29	55	12	29	40	7	29	49	28	29	30	39	♐	41	20	1	11	29
23	♌	52	32	♍	38	3	♎	48	20	♏	30	33	1	42	6	2	12	39
24	1	49	52	1	36	0	1	47	14	1	30	29	2	42	54	3	13	49
25	2	47	13	2	33	59	2	46	10	2	30	27	3	43	42	4	14	59
26	3	44	35	3	31	59	3	45	9	3	30	26	4	44	32	5	16	9
27	4	41	57	4	30	1	4	44	10	4	30	27	5	45	23	6	17	19
28	5	39	20	5	28	4	5	43	13	5	30	30	6	46	15	7	18	30
29	6	36	44	6	26	9	6	42	18	6	30	35	7	47	9	8	19	41
30	7	34	9	7	24	16	7	41	25	7	30	42	8	48	4	9	20	52
31	8	31	35	8	22	25				8	30	52				10	22	3

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1757.

Days	January.			February.			March.			April.			May.			June.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	11	23	14	12	55	55	11	9	29	11	56	23	11	12	58	11	2	4
2	12	24	25	13	56	44	12	9	34	12	55	25	12	11	3	11	59	28
3	13	25	36	14	57	32	13	9	37	13	54	24	13	9	6	12	56	50
4	14	26	46	15	58	18	14	9	37	14	53	21	14	7	7	13	54	12
5	15	27	56	16	59	4	15	9	36	15	52	16	15	5	7	14	31	34
6	16	29	6	17	59	49	16	9	33	16	51	10	16	3	5	15	48	55
7	17	30	16	19	0	32	17	9	28	17	50	2	17	1	1	16	46	15
8	18	31	25	20	1	10	18	9	20	18	48	52	17	58	56	17	43	34
9	19	32	34	21	1	50	19	9	11	19	47	40	18	56	49	18	40	52
10	20	33	42	22	2	59	20	9	0	20	46	26	19	54	41	19	38	9
11	21	34	50	23	3	6	21	8	47	21	45	9	20	52	31	20	35	25
12	22	35	58	24	3	41	22	8	32	22	43	50	21	50	20	21	32	42
13	23	37	5	25	4	15	23	8	15	23	42	29	22	48	7	22	29	57
14	24	38	12	26	4	47	24	7	56	24	41	6	23	45	53	23	27	12
15	25	39	18	27	5	18	25	7	35	25	39	42	24	43	38	24	24	26
16	26	40	23	28	5	47	26	7	12	26	38	16	25	41	21	25	21	40
17	27	41	28	29	6	14	27	6	47	27	36	48	26	39	3	26	18	54
18	28	42	32	♓	6	40	28	6	20	28	35	18	27	36	43	27	16	7
19	29	43	35	1	7	4	29	5	15	29	33	46	28	34	22	28	13	20
20	♒	44	37	2	7	27	♈	5	19	♉	32	13	29	32	0	29	10	33
21	1	45	38	3	7	48	1	4	46	1	30	38	♊	29	37	♋	7	45
22	2	46	38	4	8	7	2	4	11	2	29	0	1	27	13	1	4	57
23	3	47	38	5	8	24	3	3	33	3	27	20	2	24	47	2	2	9
24	4	48	37	6	8	39	4	2	53	4	25	38	3	22	20	2	59	21
25	5	49	36	7	8	13	5	2	11	5	23	55	4	19	52	3	56	32
26	6	50	33	8	9	5	6	1	27	6	22	10	5	17	23	4	53	43
27	7	51	29	9	9	15	7	0	41	7	20	23	6	14	52	5	50	54
28	8	52	24	10	9	23	7	59	53	8	18	34	7	12	20	6	48	5
29	9	53	19				8	59	4	9	16	44	8	9	48	7	45	16
30	10	54	12				9	58	13	10	14	52	9	7	15	8	42	26
31	11	55	4				10	57	20				10	4	40			

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1757.

Days	July			Auguſt			Septemb.			October.			November			Decemb.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	9	39	36	9	15	8	9	6	30	8	26	14	9	16	28	9	34	12
2	10	36	47	10	12	36	10	4	42	9	25	25	10	16	40	10	35	9
3	11	33	58	11	10	5	11	2	56	10	24	38	11	16	54	11	36	6
4	12	31	9	12	7	35	12	1	12	11	23	53	12	17	10	12	37	4
5	13	28	21	13	5	6	12	59	29	12	23	9	13	17	27	13	38	3
6	14	25	32	14	2	38	13	57	48	13	22	27	14	17	46	14	39	3
7	15	22	44	15	0	11	14	56	8	14	21	48	15	18	7	15	40	4
8	16	19	56	15	57	46	15	54	32	15	21	11	16	18	30	16	41	6
9	17	17	8	16	55	22	16	52	57	16	20	36	17	18	55	17	42	8
10	18	14	20	17	52	59	17	51	23	17	21	3	18	19	21	18	43	11
11	19	11	32	18	50	37	18	49	51	18	19	32	19	19	49	19	44	15
12	20	8	45	19	48	16	19	48	21	19	19	3	20	20	18	20	45	20
13	21	5	58	20	45	57	20	46	53	20	18	36	21	20	49	21	46	26
14	22	3	12	21	43	39	21	45	27	21	18	12	22	21	22	22	47	32
15	23	0	26	22	41	22	22	44	3	22	17	50	23	21	56	23	48	39
16	23	57	41	23	39	6	23	42	41	23	17	30	24	22	32	24	49	46
17	24	54	57	24	36	53	24	41	21	24	17	11	25	23	9	25	50	53
18	25	52	13	25	34	40	25	40	3	25	16	54	26	23	48	26	52	1
19	26	49	29	26	32	29	26	38	47	26	16	39	27	24	28	27	53	9
20	27	46	46	27	30	20	27	37	34	27	16	26	28	25	10	28	54	19
21	28	44	3	28	28	12	28	36	22	28	16	16	29	25	53	29	55	28
22	29	41	21	29	26	6	29	35	12	29	16	8	♐	26	37	♑	56	38
23	♌	38	40	♍	24	2	♎	34	4	♏	16	1	1	27	21	1	57	48
24	1	36	0	1	21	59	1	32	58	1	15	56	2	28	8	2	58	58
25	2	33	20	2	19	58	2	31	54	2	15	53	3	28	56	4	0	8
26	3	30	42	3	17	58	3	30	52	3	15	52	4	29	45	5	1	18
27	4	28	4	4	15	59	4	29	52	4	15	53	5	30	35	6	2	29
28	5	25	27	5	14	1	5	28	55	5	15	56	6	31	27	7	3	40
29	6	22	51	6	12	6	6	28	0	6	16	1	7	32	21	8	4	51
30	7	20	16	7	10	12	7	27	6	7	16	8	8	33	16	9	6	2
31	8	17	41	8	8	20				8	16	17				10	7	12

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1758.

Days	January.			February.			March.			April.			May.			June.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	11	8	23	12	41	8	10	54	55	11	42	5	10	58	55	10	48	11
2	12	9	34	13	41	58	11	54	59	12	41	7	11	57	0	11	45	35
3	13	10	45	14	42	46	12	55	2	13	40	6	12	55	3	12	42	58
4	14	11	55	15	43	33	13	55	3	14	39	4	13	53	5	13	40	20
5	15	13	5	16	44	18	14	55	2	15	38	0	14	51	5	14	37	41
6	16	14	15	17	45	2	15	55	1	16	36	53	15	49	4	15	35	2
7	17	15	25	18	45	45	16	54	55	17	35	48	16	47	1	16	32	22
8	18	16	35	19	46	27	17	54	48	18	34	38	17	44	56	17	29	41
9	19	17	44	20	47	7	18	54	39	19	33	26	18	42	50	18	27	0
10	20	18	53	21	47	46	19	54	29	20	32	12	19	40	42	19	24	18
11	21	20	1	22	48	23	20	54	16	21	30	56	20	38	32	20	21	35
12	32	21	8	23	48	59	21	54	2	22	29	38	21	36	21	21	18	51
13	23	22	15	24	49	33	22	53	46	23	28	18	22	34	8	22	16	7
14	24	23	22	25	50	5	23	53	28	24	26	56	23	31	54	23	13	22
15	25	24	28	26	50	36	24	53	8	25	25	32	24	29	39	24	10	37
16	26	25	33	27	51	6	25	52	45	26	24	6	25	27	23	25	7	51
17	27	26	38	28	51	34	26	52	20	27	22	38	26	25	6	26	5	5
18	28	27	42	29	52	0	27	51	53	28	21	8	27	22	46	27	2	19
19	29	28	45	♓	52	25	28	51	24	29	19	37	28	20	26	27	59	32
20	♒	29	47	1	52	48	29	50	53	♉	18	3	29	18	4	28	56	45
21	1	30	49	2	53	9	♈	50	21	1	16	28	♊	15	41	29	53	56
22	2	31	50	3	53	28	1	49	46	2	14	51	1	13	17	♋	51	8
23	3	32	50	4	53	46	2	49	9	3	13	12	2	10	52	1	48	20
24	4	33	49	5	54	2	3	48	30	4	11	31	3	8	25	2	45	32
25	5	34	48	6	54	16	4	47	49	5	9	48	4	5	57	3	42	43
26	6	35	45	7	54	29	5	47	6	6	8	4	5	3	28	4	39	54
27	7	36	41	8	54	40	6	46	21	7	6	18	6	0	58	5	37	5
28	8	37	37	9	54	48	7	45	34	8	4	30	6	58	27	6	34	16
29	9	38	32				8	44	45	9	2	40	7	55	54	7	31	27
30	10	39	36				9	43	53	10	0	48	8	53	20	8	28	37
31	11	40	17				10	42	59				9	50	46			

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1758.

Days	July.			Auguſt.			Septemb.			October.			Novemb.			Decemb.		
	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
1	9	25	44	9	1	16	8	52	26	8	11	54	9	1	51	9	19	25
2	10	22	58	9	58	43	9	50	38	9	11	4	10	2	3	10	20	21
3	11	20	9	10	56	11	10	48	51	10	10	16	11	2	17	11	21	18
4	12	17	20	11	53	40	11	47	6	11	9	30	12	2	32	12	22	16
5	13	14	31	12	51	10	12	45	22	12	8	46	13	2	45	13	23	15
6	14	11	42	13	48	42	13	43	40	13	8	4	14	3	8	14	24	15
7	15	8	54	14	46	15	14	42	1	14	7	24	15	3	29	15	25	15
8	16	6	6	15	43	49	15	40	23	15	6	47	16	3	51	16	26	16
9	17	3	18	16	41	25	16	38	47	16	6	12	17	4	15	17	27	18
10	18	0	30	17	39	2	17	37	13	17	5	39	18	4	41	18	28	21
11	18	57	42	18	36	40	18	35	42	18	5	8	19	5	8	19	29	25
12	19	54	55	19	34	19	19	34	12	19	4	39	20	5	37	20	30	30
13	20	52	8	20	31	59	20	32	44	20	4	11	21	6	8	21	31	35
14	21	49	52	21	29	40	21	31	18	21	3	45	22	6	40	22	32	41
15	22	46	36	22	27	23	22	29	52	22	3	22	23	7	14	23	33	47
16	23	43	51	23	25	7	23	28	29	23	3	1	24	7	49	24	34	54
17	24	41	6	24	22	54	24	27	9	24	2	42	25	8	26	25	36	2
18	25	38	22	25	20	41	25	25	51	25	2	25	26	9	5	26	37	10
19	26	35	38	26	18	30	26	24	35	26	2	10	27	9	45	27	38	18
20	27	32	55	27	16	20	27	23	21	27	1	57	28	10	26	28	39	27
21	28	30	12	28	14	12	28	22	9	28	1	46	29	11	8	29	40	37
22	29	27	30	29	12	5	29	20	58	29	1	37	♐	11	51	♑	41	47
23	♌	24	49	♍	10	0	♎	19	49	♏	1	30	1	12	36	1	42	57
24	1	22	8	1	7	57	1	18	42	1	1	24	2	13	22	2	44	7
25	2	19	28	2	5	55	2	17	37	2	1	20	3	14	10	3	45	17
26	3	16	49	3	3	55	3	16	35	3	1	18	4	14	59	4	46	27
27	4	14	11	4	1	56	4	15	35	4	1	18	5	15	50	5	47	37
28	5	11	34	4	59	58	5	14	47	5	1	21	6	16	42	6	48	48
29	6	8	59	5	58	2	6	13	41	6	1	26	7	17	35	7	49	59
30	7	6	24	6	56	8	7	12	47	7	1	33	8	18	30	8	51	10
31	8	3	50	7	54	16				8	1	41				9	52	21

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1759.

Days	January.			February.			March.			April.			May.			June.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	10	53	32	12	26	22	10	40	20	11	27	45	10	44	51	10	34	19
2	11	54	43	13	27	12	11	40	25	12	26	48	11	42	57	11	31	43
3	12	55	54	14	28	0	12	40	28	13	25	49	12	41	1	12	29	6
4	13	57	4	15	28	47	13	40	30	14	24	48	13	39	3	13	26	29
5	14	58	14	16	29	33	14	40	30	15	23	45	14	37	3	14	23	51
6	15	59	24	17	30	17	15	40	28	16	22	39	15	35	2	15	21	12
7	17	0	35	18	31	0	16	40	24	17	21	31	16	32	59	16	18	32
8	18	1	43	19	31	42	17	40	18	18	20	21	17	30	55	17	15	51
9	19	2	52	20	32	23	18	40	10	19	19	10	18	28	49	18	13	9
10	20	4	1	21	33	2	19	40	0	20	17	57	19	26	42	19	10	27
11	21	5	9	22	33	40	20	39	48	21	16	42	20	24	33	20	7	44
12	22	6	17	23	34	16	21	39	34	22	15	25	21	22	22	21	5	0
13	23	7	24	24	34	51	22	39	18	23	14	6	22	20	9	22	2	16
14	24	8	31	25	35	24	23	39	0	24	12	44	23	17	53	23	59	31
15	25	9	37	26	33	56	24	38	40	25	11	20	24	15	45	23	36	46
16	26	10	43	27	36	26	25	38	18	26	9	54	25	13	27	24	54	1
17	27	11	48	28	36	54	26	37	54	27	8	27	26	11	8	25	51	15
18	28	12	52	29	37	21	27	37	28	28	6	58	27	8	48	26	48	28
19	29	13	55	♓	37	46	28	37	0	29	5	27	28	6	27	27	45	41
20	♒	14	58	1	38	9	29	36	30	♉	3	54	29	4	7	28	42	54
21	1	16	0	2	38	30	♈	35	57	1	2	20	♊	1	45	29	40	6
22	2	17	1	3	38	50	1	35	22	2	0	44	0	59	21	♋	37	18
23	3	18	1	4	39	8	2	34	46	2	59	6	1	56	56	1	34	30
24	4	19	1	5	39	24	3	34	8	3	57	26	2	54	30	2	31	42
25	5	19	59	6	39	39	4	33	28	4	55	44	3	52	3	3	28	53
26	6	20	56	7	39	52	5	32	45	5	53	59	4	49	34	4	26	4
27	7	21	53	8	40	3	6	32	0	6	52	13	5	47	4	5	23	15
28	8	22	49	9	40	12	7	31	13	7	50	25	6	44	33	6	20	26
29	9	23	44				8	30	24	8	48	35	7	42	1	7	17	37
30	10	24	38				9	29	33	9	46	44	8	39	28	8	14	48
31	11	25	31				10	28	40				9	36	54			

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1759.

Days	July.			Auguſt.			Septemb.			October.			Novemb.			Decemb.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	9	11	58	8	47	22	8	38	22	7	57	34	8	47	16	9	4	37
2	10	9	9	9	44	49	9	36	33	8	56	43	9	47	27	10	5	33
3	11	6	20	10	42	17	10	34	45	9	55	54	10	47	40	11	6	30
4	12	3	31	11	39	46	11	32	59	10	55	8	11	47	55	12	7	27
5	13	0	42	12	37	16	12	31	15	11	54	24	12	48	12	13	8	26
6	13	57	53	13	34	48	13	29	33	12	53	42	13	48	30	14	9	26
7	14	55	4	14	32	21	14	27	53	13	53	2	14	48	50	15	10	27
8	15	52	16	15	29	55	15	26	15	14	52	24	15	49	12	16	11	28
9	16	49	28	16	27	30	16	24	39	15	51	48	16	49	36	17	12	30
10	17	46	40	17	25	6	17	23	5	16	51	14	17	50	1	18	13	33
11	18	43	52	18	22	43	18	21	33	17	50	42	18	50	28	19	14	36
12	19	41	5	19	20	22	19	20	2	18	50	12	19	50	57	20	15	40
13	20	38	18	20	18	2	20	18	33	19	49	44	20	51	27	21	16	45
14	21	35	32	21	15	43	21	17	6	20	49	18	21	51	59	22	17	50
15	22	32	46	22	13	26	22	15	41	21	48	54	22	52	32	23	18	56
16	23	30	1	23	11	10	23	14	18	22	48	32	23	53	7	24	20	3
17	24	27	16	24	8	56	24	12	57	23	48	13	24	53	43	25	21	11
18	25	24	31	25	6	43	25	11	38	24	47	56	25	51	21	26	22	19
19	26	21	47	26	4	31	26	10	21	25	47	41	26	55	0	27	23	28
20	27	19	3	27	2	21	27	9	6	26	47	28	27	55	41	28	24	37
21	28	16	20	28	0	12	28	7	53	27	47	16	28	56	23	29	25	46
22	29	13	38	28	58	5	29	6	42	28	47	6	29	57	6	♑	26	56
23	♌	10	57	29	55	59	♎	5	33	29	46	58	♐	57	51	1	28	6
24	1	8	16	♍	53	55	1	4	26	♏	46	52	1	58	37	2	29	16
25	2	5	36	1	51	53	2	3	21	1	46	48	2	59	25	3	30	26
26	3	2	57	2	49	52	3	2	19	2	46	46	4	0	14	4	31	36
27	4	0	19	3	47	53	4	1	18	3	46	46	5	1	5	5	32	46
28	4	57	42	4	45	55	5	0	19	4	46	48	6	1	56	6	33	56
29	5	55	6	5	43	59	5	59	22	5	46	52	7	2	48	7	35	7
30	6	52	31	6	42	5	6	58	27	6	46	58	8	3	42	8	36	18
31	7	49	56	7	40	13				7	47	6				9	37	29

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1760.

Days	January.			February.			March.			April.			May.			June.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	10	38	40	12	11	36	11	25	51	12	12	30	11	28	54	11	17	50
2	11	39	51	13	12	26	12	25	55	13	11	31	12	26	58	12	15	14
3	12	41	2	14	13	15	13	25	57	14	10	30	13	25	0	13	12	37
4	13	42	13	15	14	2	14	25	57	15	9	27	14	23	1	14	9	59
5	14	43	23	16	14	48	15	25	55	16	8	22	15	21	0	15	7	20
6	15	44	33	17	15	33	16	25	51	17	7	15	16	18	57	16	4	40
7	16	45	43	18	16	17	17	25	46	18	6	6	17	16	53	17	1	59
8	17	46	53	19	16	59	18	25	39	19	4	56	18	14	49	17	59	18
9	18	48	2	20	17	40	19	25	30	20	3	44	19	12	42	18	56	36
10	19	49	11	21	18	19	20	25	19	21	2	29	20	10	34	19	53	53
11	20	50	19	22	18	57	21	25	5	22	1	12	21	8	25	20	51	10
12	21	51	27	23	19	34	22	24	49	22	59	53	22	6	12	21	48	26
13	22	52	34	24	20	9	23	24	31	23	58	32	23	3	59	22	45	42
14	23	53	41	25	20	43	24	24	12	24	57	9	24	1	45	23	42	57
15	24	54	47	26	21	15	25	23	51	25	55	44	24	59	29	24	40	11
16	25	55	53	27	21	45	26	23	28	26	54	17	25	57	11	25	37	25
17	26	56	58	28	22	14	27	23	2	27	52	48	26	54	53	26	34	39
18	27	58	2	29	22	41	28	22	34	28	51	18	27	52	33	27	31	53
19	28	59	6	♓	23	6	29	22	4	29	49	46	28	50	12	28	29	4
20	♒	0	9	1	23	30	♈	21	32	♉	48	12	29	47	50	29	26	16
21	1	1	11	2	23	52	1	20	58	1	46	33	♊	45	26	♋	23	28
22	2	2	12	3	24	12	2	20	22	2	44	58	1	43	1	1	20	40
23	3	3	13	4	24	31	3	19	45	3	43	18	2	40	35	2	17	52
24	4	4	13	5	24	48	4	19	5	4	41	36	3	38	8	3	15	4
25	5	5	12	6	25	3	5	18	23	5	39	52	4	35	39	4	12	15
26	6	6	10	7	25	16	6	17	39	6	38	6	5	33	9	5	9	26
27	7	7	6	8	25	27	7	16	52	7	36	19	6	31	38	6	6	37
28	8	8	3	9	25	37	8	16	3	8	34	30	7	28	6	7	3	48
29	9	8	58	10	25	45	9	15	3	9	32	40	8	25	33	8	0	59
30	10	9	52				10	14	21	10	30	48	9	22	59	8	58	9
31	11	10	45				11	13	27				10	20	25			

A TABLE *of the* Sun's *place in the* Ecliptick, *for the year* 1760.

Days	July.			Auguſt.			Septemb.			October.			Novemb.			Decemb.		
	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
1	9	55	19	9	30	56	9	22	26	8	42	14	9	32	50	9	50	45
2	10	52	30	10	28	24	10	20	39	9	41	34	10	33	3	10	51	42
3	11	49	41	11	25	53	11	18	53	10	40	47	11	33	18	11	52	40
4	12	46	52	12	23	22	12	17	9	11	40	2	12	33	34	12	53	38
5	13	44	3	13	20	52	13	15	27	12	39	19	13	33	52	13	54	37
6	14	41	15	14	18	24	14	13	47	13	38	38	14	34	12	14	55	37
7	15	38	27	15	15	57	15	12	8	14	38	0	15	34	33	15	56	38
8	16	35	39	16	13	33	16	10	31	15	37	24	16	34	56	16	57	40
9	17	32	51	17	11	9	17	8	55	16	36	50	17	35	21	17	58	43
10	18	30	3	18	8	46	18	7	24	17	36	18	18	35	47	18	59	46
11	19	27	15	19	6	25	19	5	52	18	35	47	19	36	15	20	0	50
12	20	24	28	20	4	5	20	4	23	19	35	18	20	36	45	21	1	55
13	21	21	41	21	1	46	21	2	55	20	34	51	21	37	17	22	3	0
14	22	18	55	21	59	28	22	1	59	21	34	27	22	37	50	23	4	6
15	23	16	10	22	57	12	23	0	5	22	34	5	23	38	24	24	5	13
16	24	13	25	23	54	57	23	58	43	23	33	45	24	39	0	25	6	20
17	25	10	41	24	52	44	24	57	24	24	33	27	25	39	38	26	7	28
18	26	7	57	25	50	33	25	56	7	25	33	11	26	40	17	27	8	36
19	27	5	13	26	48	23	26	54	52	26	32	57	27	40	57	28	9	45
20	28	2	30	27	46	15	27	53	39	27	32	45	28	41	39	29	10	54
21	28	59	48	28	44	8	28	52	27	28	32	35	29	42	22	♑	12	4
22	29	57	6	29	42	2	29	51	17	29	32	27	♐	43	6	1	13	14
23	♌	54	25	♍	39	57	♎	50	9	♏	32	20	1	43	51	2	14	24
24	1	51	44	1	37	53	1	49	4	1	32	15	2	44	39	3	15	34
25	2	49	5	2	35	15	2	48	1	2	32	12	3	45	28	4	16	44
26	3	46	27	3	33	51	3	47	0	3	32	12	4	46	18	5	17	54
27	4	43	50	4	31	53	4	46	1	4	32	14	5	47	9	6	19	5
28	5	41	13	5	29	56	5	45	4	5	32	18	6	48	1	7	20	16
29	6	38	37	6	28	1	6	44	8	6	32	23	7	48	54	8	21	27
30	7	36	2	7	26	8	7	43	14	7	32	30	8	49	49	9	22	38
31	8	33	29	8	24	17				8	32	39				10	23	49

A TABLE *of the* Sun's true Longitude in the *year* 1761.

Days	January.			February.			March.			April.			May.			June.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	11	24	59	12	57	40	11	11	16	11	58	12	11	14	50	11	3	57
2	12	26	10	13	58	29	12	11	21	12	57	14	12	12	55	12	1	21
3	13	27	21	14	59	18	13	11	24	13	56	14	13	10	58	12	58	43
4	14	28	31	16	0	4	14	11	24	14	55	11	14	8	59	13	56	5
5	15	29	41	17	0	50	15	11	23	15	54	6	15	6	59	14	53	27
6	16	30	51	18	1	35	16	11	20	16	53	0	16	4	57	15	50	48
7	17	32	1	19	2	18	17	11	16	17	51	52	17	2	53	16	48	8
8	18	33	10	20	2	56	18	11	8	18	50	42	18	0	48	17	45	27
9	19	34	19	21	3	36	19	10	59	19	49	30	18	58	41	18	42	45
10	20	35	27	22	4	15	20	10	48	20	48	16	19	56	33	19	40	2
11	21	36	35	23	4	52	21	10	35	21	46	59	20	54	23	20	37	19
12	22	37	43	24	5	28	22	10	20	22	45	40	21	52	12	21	34	35
13	23	38	50	25	6	1	23	10	3	23	44	19	22	49	59	22	31	50
14	24	39	57	26	6	33	24	9	44	24	42	55	23	47	45	23	29	5
15	25	41	3	27	7	4	25	9	23	25	41	32	24	45	30	24	26	19
16	26	42	8	28	7	33	26	9	0	26	40	7	25	43	13	25	23	34
17	27	43	13	29	8	0	27	8	35	27	38	39	26	40	55	26	20	48
18	28	44	17	♓	8	26	28	8	8	28	37	9	27	38	35	27	18	1
19	29	45	20	1	8	50	29	7	39	29	35	37	28	36	14	28	15	14
20	♒	46	22	2	9	14	♈	7	7	♉	34	4	29	33	52	29	12	27
21	1	47	23	3	9	35	1	6	34	1	32	29	♊	31	29	♋	9	39
22	2	48	23	4	9	54	2	5	59	2	30	51	1	29	5	1	6	51
23	3	49	23	5	10	11	3	5	21	3	29	11	2	26	40	2	4	3
24	4	50	22	6	10	26	4	4	41	4	27	29	3	24	13	3	1	15
25	5	51	20	7	10	40	5	3	59	5	25	46	4	21	45	3	58	26
26	6	52	18	8	10	52	9	3	16	6	24	1	5	19	16	4	55	37
27	7	53	14	9	11	2	7	2	20	7	22	14	6	16	45	5	52	48
28	8	54	9	10	11	10	8	1	32	8	20	25	7	14	13	6	49	59
29	9	55	4				9	0	53	9	18	35	8	11	41	7	47	10
30	10	55	57				10	0	2	10	16	43	9	9	8	8	44	20
31	11	56	49				10	59	9				10	6	33			

A TABLE *of the* Sun's true Longitude *in the year* 1761.

Days	July.			Auguſt.			Septemb.			October.			Novemb.			Decemb.		
	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″
1	9	41	30	9	17	1	9	8	22	8	28	3	9	18	15	9	35	57
2	10	38	41	10	14	29	10	6	34	9	27	14	10	18	27	10	36	54
3	11	35	52	11	11	58	11	4	48	10	26	27	11	18	41	11	37	51
4	12	33	3	12	9	28	12	3	4	11	25	42	12	18	57	12	38	49
5	13	30	15	13	6	59	13	1	21	12	24	58	13	19	14	13	39	48
6	14	27	27	14	4	34	13	59	40	13	24	16	14	19	33	14	40	48
7	15	24	39	15	2	4	14	58	0	14	23	37	15	19	54	15	41	49
8	16	21	51	15	59	39	15	56	23	15	23	0	16	20	17	16	42	51
9	17	19	3	16	57	15	16	54	48	16	22	25	17	20	41	17	43	53
10	18	16	15	17	54	52	17	53	14	17	21	52	18	21	7	18	44	56
11	19	13	27	18	52	30	18	51	42	18	21	21	19	21	35	19	46	0
12	20	10	39	19	50	9	19	50	12	19	20	51	20	22	4	20	47	5
13	21	7	52	20	47	50	20	48	44	20	20	24	21	22	35	21	48	12
14	22	5	5	21	45	32	21	47	18	21	20	0	22	23	8	22	49	17
15	23	2	19	22	43	14	22	45	54	22	19	38	23	23	42	23	50	24
16	23	59	34	23	40	58	23	44	32	23	19	18	24	24	18	24	51	31
17	24	56	50	24	38	45	24	43	12	24	18	59	25	24	55	25	52	38
18	25	54	6	25	36	32	25	41	54	25	18	42	26	25	34	26	53	46
19	26	51	22	26	34	21	26	40	38	26	18	27	27	26	14	27	54	54
20	27	48	39	27	32	12	27	39	24	27	18	14	28	26	56	28	56	3
21	28	45	56	28	30	4	28	38	12	28	18	4	29	27	39	29	57	12
22	29	43	14	29	27	58	29	37	2	29	17	56	♐	28	23	♑	58	23
23	♌	40	33	♍	25	54	♎	35	54	♏	17	49	1	29	8	1	59	33
24	1	37	53	1	23	51	1	34	48	1	17	44	2	29	54	3	0	43
25	2	35	13	2	21	50	2	33	44	2	17	40	3	30	42	4	1	53
26	3	32	35	3	19	50	3	32	42	3	17	39	4	31	30	5	3	3
27	4	29	57	4	17	51	4	31	42	4	17	40	5	32	20	6	4	14
28	5	27	20	5	15	53	5	30	45	5	17	43	6	33	12	7	5	25
29	6	24	44	6	13	58	6	29	49	6	17	48	7	34	6	8	6	36
30	7	22	9	7	12	4	7	28	55	7	17	55	8	35	1	9	7	47
31	8	19	34	8	10	12				8	18	4				10	8	58

THE

Young Aſtronomer's Aſſiſtant,

AND

Countryman's Daily Companion,

For SEVEN YEARS;

Beginning with the Year 1755, and continued to the Year 1762.

Wherein are ſet forth,

I. Perpetual Tables, ſhewing the Sun's Riſing and Setting to every Day in the Year.

II. A Table for finding the Moon's Riſing and Setting at all Times.

III. Tables of the Moon's Signs, with an Explanation of their Uſes.

IV. A Perpetual Table of the Riſing, Southing, and Setting of the Seven Stars, for finding the Hour of the Night; as alſo the Southing of divers remarkable fixed Stars at Midnight, for the ſame Purpoſe; and the Fulls, Changes, Quarters, and Southing of the Moon.

LIKEWISE,

Remarkable TIMES and ECLIPSES of both Luminaries.

The

TABLES *ſhewing the exact time of* Sun-riſing *for*

M.D.	Janu.		Feb.		Mar.		Apr		May.		June.	
	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
1	8	10	7	36	6	39	5	38	4	41	3	57
2	8	10	7	35	6	37	5	36	4	40	3	56
3	8	9	7	33	6	35	5	34	4	38	3	55
4	8	8	7	32	6	33	5	32	4	36	3	54
5	8	7	7	30	6	31	5	30	4	35	3	54
6	8	6	7	28	6	29	5	28	4	33	3	53
7	8	5	7	25	6	27	5	26	4	32	3	53
8	8	4	7	23	6	25	5	24	4	30	3	52
9	8	3	7	20	6	23	5	22	4	28	3	52
10	8	2	7	17	6	21	5	20	4	26	3	51
11	8	2	7	15	6	20	5	19	4	24	3	51
12	8	1	7	13	6	18	5	17	4	23	3	50
13	8	0	7	11	6	16	5	15	4	21	3	50
14	7	59	7	9	6	14	5	13	4	19	3	50
15	7	58	7	7	6	12	5	11	4	18	3	49
16	7	56	7	5	6	10	5	9	4	17	3	49
17	7	55	7	3	6	8	5	7	4	16	3	48
18	7	53	7	1	6	6	5	5	4	14	3	48
19	7	51	6	59	6	4	5	3	4	13	3	48
20	7	50	6	57	6	2	5	1	4	11	3	47
21	7	49	6	55	6	0	5	0	4	10	3	47
22	7	48	6	53	5	58	4	58	4	8	3	47
23	7	47	6	51	5	56	4	56	4	7	3	47
24	7	46	6	49	5	54	4	54	4	5	3	47
25	7	44	6	47	5	52	4	52	4	4	3	48
26	7	43	6	45	5	50	4	51	4	3	3	48
27	7	42	6	43	5	48	4	49	4	2	3	48
28	7	41	6	41	5	46	4	47	4	1	3	49
29	7	40	6	40	5	44	4	45	4	0	3	49
30	7	39			5	42	4	43	3	59	3	50
31	7	37			5	40			3	58		

Note. If you double the time of ſun-riſing it wil *every day in the year, forever; ſerving to the latitude* 52°.

M.D.	July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
1	3	51	4	23	5	16	6	15	7	14	8	1
2	3	51	4	24	5	18	6	17	7	16	8	2
3	3	52	4	26	5	20	6	19	7	18	8	3
4	3	53	4	27	5	22	6	21	7	20	8	4
5	3	53	4	29	5	24	6	23	7	22	8	5
6	3	54	4	30	5	26	6	25	7	24	8	6
7	3	54	4	32	5	28	6	26	7	26	8	7
8	3	55	4	33	5	30	6	28	7	28	8	8
9	3	55	4	35	5	32	6	30	7	30	8	9
10	3	56	4	36	5	34	6	32	7	31	8	9
11	3	56	4	38	5	36	6	34	7	33	8	10
12	3	57	4	39	5	38	6	36	7	34	8	10
13	3	58	4	41	5	40	6	38	7	36	8	11
14	3	59	4	42	5	42	6	40	7	37	8	11
15	4	0	4	44	5	44	6	42	7	39	8	11
16	4	1	4	46	5	45	6	44	7	40	8	12
17	4	3	4	48	5	47	6	46	7	42	8	12
18	4	4	4	49	5	49	6	48	7	43	8	12
19	4	5	4	51	5	51	6	50	7	45	8	13
20	4	6	4	53	5	53	6	52	7	46	8	13
21	4	7	4	55	5	55	6	54	7	47	8	13
22	4	8	4	57	5	57	6	56	7	49	8	13
23	4	10	4	59	5	59	6	58	7	50	8	13
24	4	11	5	1	6	0	6	59	7	51	8	13
25	4	12	5	3	6	2	7	1	7	53	8	13
26	4	14	5	4	6	5	7	3	7	54	8	12
27	4	15	5	6	6	7	7	5	7	56	8	12
28	4	17	5	8	6	9	7	7	7	57	8	12
29	4	18	5	10	6	11	7	2	7	58	8	11
30	4	20	5	12	6	13	7	11	7	59	8	11
31	4	21	5	14			7	13			8	11

give you the exact length of the night. See page 56.

TABLES *ſhewing the exact time of* Sun-ſetting *for*

M.D.	Jan.		Feb.		Mar.		Apr.		May.		June.	
	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
1	3	50	4	24	5	21	6	22	7	19	8	3
2	3	50	4	25	5	23	6	24	7	20	8	4
3	3	51	4	27	5	25	6	26	7	22	8	5
4	3	52	4	28	5	27	6	28	7	24	8	6
5	3	53	4	30	5	29	6	30	7	25	8	6
6	3	54	4	32	5	31	6	32	7	27	8	7
7	3	55	4	35	5	33	6	34	7	28	8	7
8	3	56	4	37	5	35	6	36	7	30	8	8
9	3	57	4	40	5	37	6	38	7	32	8	8
10	3	58	4	43	5	39	6	40	7	34	8	9
11	3	58	4	45	5	40	6	41	7	36	8	9
12	3	59	4	47	5	42	6	43	7	37	8	10
13	4	0	4	49	5	44	6	45	7	39	8	10
14	4	1	4	51	5	46	6	47	7	41	8	10
15	4	2	4	53	5	48	6	49	7	42	8	11
16	4	4	4	55	5	50	6	51	7	43	8	11
17	4	5	4	57	5	52	6	53	7	44	8	12
18	4	7	4	59	5	54	6	55	7	46	8	12
19	4	9	5	1	5	56	6	57	7	47	8	12
20	4	10	5	3	5	58	6	59	7	49	8	13
21	4	11	5	5	6	0	7	0	7	50	8	13
22	4	12	5	7	6	2	7	2	7	52	8	14
23	4	13	5	9	6	4	7	4	7	53	8	13
24	4	14	5	11	6	6	7	6	7	55	8	13
25	4	16	5	13	6	8	7	8	7	56	8	12
26	4	17	5	15	6	10	7	9	7	57	8	12
27	4	18	5	17	6	12	7	11	7	58	8	12
28	4	19	5	19	6	14	7	13	7	59	8	11
29	4	20	5	20	6	16	7	15	8	0	8	11
30	4	21			6	18	7	17	8	1	8	10
31	4	23			6	20			8	2		

Note. If you double the time of ſun-ſetting, it will give the exact length of the day.

every day in the year forever, ſerving to the latitude of 51° 41′.

M.D.	July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
1	8	9	7	37	6	44	5	45	4	46	3	59
2	8	9	7	36	6	42	5	43	4	44	3	58
3	8	8	7	34	6	40	5	41	4	42	3	57
4	8	7	7	33	6	38	5	39	4	40	3	56
5	8	7	7	31	6	36	5	37	4	38	3	55
6	8	6	7	30	6	34	5	35	4	36	3	54
7	8	6	7	28	6	32	5	34	4	34	3	53
8	8	5	7	27	6	30	5	32	4	32	3	52
9	8	5	7	25	6	28	5	30	4	30	3	51
10	8	4	7	24	6	26	5	28	4	29	3	51
11	8	4	7	22	6	24	5	26	4	27	3	50
12	8	3	7	21	6	22	5	24	4	26	3	50
13	8	2	7	19	6	20	5	22	4	24	3	49
14	8	1	7	18	6	18	5	20	4	23	3	49
15	8	0	7	16	6	16	5	18	4	21	3	49
16	7	59	7	14	6	15	5	16	4	20	3	48
17	7	57	7	12	6	13	5	14	4	18	3	48
18	7	56	7	11	6	11	5	12	4	17	3	48
19	7	55	7	9	6	9	5	10	4	15	3	47
20	7	54	7	7	6	7	5	8	4	14	3	47
21	7	53	7	5	6	5	5	6	4	13	3	47
22	7	52	7	3	6	3	5	4	4	11	3	47
23	7	50	7	1	6	1	5	2	4	10	3	47
24	7	49	7	0	5	59	5	1	4	9	3	47
25	7	48	6	58	5	57	4	59	4	7	3	47
26	7	46	6	56	5	55	4	57	4	6	3	48
27	7	45	6	54	5	53	4	55	4	4	3	48
28	7	44	6	52	5	51	4	53	4	3	3	48
29	7	42	6	50	5	49	4	51	4	2	3	49
30	7	40	6	48	5	47	4	49	4	1	3	49
31	7	39	6	46			4	47			3	49

EXAMPLE. On January the 1ſt, the ſun ſets 50 m. after 3, which doubled make 7 hours and 40 minutes, the length of that day, and ſo of the reſt.

JANUARY hath XXXI Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755		1756		1757	
		W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	Circumciſion	w	morn.	th	11 30	ſ	aftern.
2	*Day breaks* 6	th	3 14	f	aftern.	B	10 3
3		f	4 6	ſ	1 30	m	10 49
4		ſ	5 0	D	2 29	tu	11 37
5	Old Chriſtmas	E	5 52	m	3 26	w	morn.
6	Epiphany	m	6 44	tu	4 12	th	0 25
7		tu	7 35	w	4 51	f	1 13
8	*Clock f. 7. m.*	w	8 25	th	5 38	ſ	2 0
9	☉ eclipſ. 1758	th	9 22	f	6 15	B	2 47
10	*Pollux*	f	10 15	ſ	6 57	m	3 32
11	*Phrocyon*	ſ	11 8	D	7 44	tu	4 18
12	*Day* 8 *h. long*	E	11 57	m	8 27	w	5 2
13	☽ ecl. viſ. 1759	m	aftern.	tu	9 17	th	5 51
14		tu	1 37	w	10 0	f	6 38
15		w	2 26	th	10 47	ſ	7 29
16	*Clock f.* 10 *m.*	th	3 10	f	11 38	B	8 24
17		f	3 53	ſ	morn.	m	9 21
18	*Day br.* 5 *h.* 45	ſ	4 36	D	0 27	tu	10 23
19		E	5 18	m	1 17	w	11 27
20	Sun ent. ♒	m	6 0	tu	2 7	th	aftern.
21	*Clock f.* 11 *m.*	tu	6 44	w	3 0	f	1 26
22		w	7 28	th	3 55	ſ	2 26
23		th	8 19	f	4 37	B	3 19
24	*Day* 8 *h.* 30 *m.*	f	9 8	ſ	5 27	m	4 13
25	St. Paul's conv.	ſ	10 2	D	6 14	tu	4 56
26		E	10 57	m	7 13	w	5 38
27	*Clock f.* 13 *m.*	m	11 54	tu	8 9	th	6 21
28		tu	morn.	w	9 7	f	7 3
29		w	0 52	th	10 7	ſ	7 51
30	K. Ch. I. beh.	th	1 47	f	11 5	B	8 29
31		f	2 41	ſ	11 59	m	9 19
		D. H. Laſt Q. 5 1 A. New M. 12 1 A. Firſt Q. 20 0 ... Full M. 28 3 M.		D. H. New M. 1 12 N. Firſt Q. 9 8 M. Full M. 17 11 M. Laſt Q. 24 5 A. New M. 31 0 ...		D. H. Full M. 5 0 ... Laſt Q. 13 10 M. New M. 20 2 M. Firſt Q. 27 3 M.	

JANUARY for ſeven Years.

M. D.	1758		1759		1760		1761	
	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	A	morn.	m	aftern.	tu	11 22	th	morn.
2	m	5 51	tu	3 12	w	morn.	f	8 54
3	tu	6 32	w	4 7	th	0 22	ſ	9 38
4	w	7 19	th	4 59	f	1 20	D	10 25
5	th	8 3	f	5 48	ſ	2 16	m	11 17
6	f	8 54	ſ	6 37	F	3 7	tu	12 6
7	ſ	9 46	G	7 25	m	3 54	w	aftern.
8	A	10 47	m	8 15	tu	4 37	th	1 48
9	m	11 49	tu	9 5	w	5 18	f	2 35
10	tu	aftern.	w	9 57	th	5 59	ſ	3 25
11	w	2 3	th	10 50	f	6 38	D	4 12
12	th	2 59	f	11 45	ſ	7 19	m	4 56
13	f	3 53	ſ	morn.	F	8 1	tu	5 41
14	ſ	4 42	G	0 36	m	8 46	w	6 28
15	A	5 31	m	1 26	tu	9 35	th	7 19
16	m	6 18	tu	2 13	w	10 26	f	8 13
17	tu	7 1	w	2 58	th	11 20	ſ	9 12
18	w	7 46	th	3 41	f	aftern.	D	10 15
19	th	8 33	f	4 21	ſ	1 12	m	11 20
20	f	9 20	ſ	5 3	F	2 6	tu	12 21
21	ſ	10 6	G	5 44	m	2 58	w	morn.
22	A	10 58	m	6 36	tu	3 48	th	1 22
23	m	11 46	tu	7 10	w	4 35	f	2 16
24	tu	morn.	w	7 58	th	5 23	ſ	3 5
25	w	0 33	th	8 50	f	6 12	D	3 50
26	th	1 20	f	9 45	ſ	7 5	m	4 33
27	f	2 5	ſ	10 45	F	8 0	tu	5 14
28	ſ	2 48	G	11 46	m	8 57	w	5 56
29	A	3 31	m	aftern.	tu	9 55	th	6 38
30	m	4 14	tu	1 45	w	10 54	f	7 22
31	tu	4 57	w	2 40	th	11 51	f	8 8
	D. H. Laſt Q. 2 5 A. New M. 9 6 N. Firſt Q. 16 10 M. Full M. 24 7 M.		D. H. Firſt Q. 6 3 M. Full M. 13 8 M. Laſt Q. 21 0 ... New M. 28 8 N.		D. H. Full M. 2 5 A. Laſt Q. 10 6 M. New M. 18 7 M. Firſt Q. 25 7 M.		D. H. New M. 6 10 M. Firſt Q. 14 2 M. Full M. 20 6 N. Laſt Q. 27 12 N.	

FEBRUARY hath XXVIII Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755		1756		1757	
		W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	*Daybr. 5h. 30m.*	ſ	morn.	D	aftern.	tu	aftern.
2	*Purif. of* V. M.	E	4 29	m	1 46	w	10 52
3	*Clock f. 14 m.*	m	5 22	tu	2 35	th	11 44
4	M. ecl. viſ. 1757	tu	6 13	w	3 21	f	morn.
5	*Day 9 hours 1*	w	7 4	th	4 3	ſ	0 32
6	*Day inc. 1 h. 43*	th	7 55	f	4 48	B	1 21
7		f	8 48	ſ	5 38	m	2 9
8	S. ecl. inv. 1758	ſ	9 39	D	6 12	tu	2 57
9		E	10 30	m	6 55	w	3 44
10	*Clock f. 15 m.*	m	11 20	tu	7 41	th	4 33
11	*Day br. 5 h. 15*	tu	aftern.	w	8 30	f	5 20
12		w	0 35	th	9 19	ſ	6 14
13	*Lion's heart*	th	1 39	f	10 11	B	7 10
14	Valentine	f	2 18	ſ	11 3	m	8 6
15		ſ	3 4	D	11 50	tu	9 6
16	*Lion's neck*	E	3 47	m	morn.	w	10 5
17		m	4 30	tu	0 49	th	11 3
18	S. ecl. inv. 1757	tu	5 14	w	1 39	f	aftern.
19	Sun in ♓	w	6 0	th	2 30	ſ	1 1
20		th	6 49	f	3 21	B	1 52
21	*Clock f. 14 m.*	f	7 39	ſ	4 12	m	2 40
22		ſ	8 33	D	5 4	tu	3 29
23		E	9 32	m	6 0	w	4 10
24	St. Matthias	m	10 31	tu	6 54	th	4 53
25		tu	11 29	w	7 52	f	5 38
26	*Daybr. 4h. 48m.*	w	morn.	th	8 48	ſ	6 22
27	*Day inc. 3 h.*	th	0 28	f	9 44	B	7 7
28	*Clock f. 13 m.*	f	1 23	ſ	10 39	m	7 55
29	*In leap year.*			C	11 31		
		 Laſt Q. New M. Firſt Q. Full M.	D. H. 3 9 N. 11 5 M. 19 9 M. 26 3 A.	 Firſt Q. Full M. Laſt Q.	D. H. 8 4 M. 16 3 M. 23 1 M.	 Full M. Laſt. Q. New M. Firſt Q.	D. H. 4 7 M. 11 9 N. 18 1 A. 25 9 N.

FEBRUARY for ſeven Years.

M. D.	1758		1759		1760		1761	
	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	w	morn.	th	aftern.	f	morn.	D	morn.
2	th	6 30	f	4 22	ſ	0 44	m	9 48
3	f	7 22	ſ	5 12	F	1 33	tu	10 40
4	ſ	8 17	G	6 1	m	2 19	w	11 32
5	A	9 16	m	6 51	tu	3 2	th	aftern.
6	m	10 19	tu	7 42	w	3 43	f	1 11
7	tu	11 23	w	8 35	th	4 24	ſ	2 0
8	w	aftern.	th	9 28	f	5 4	D	[illegible] 4
9	th	1 24	f	10 20	ſ	5 46	m	3 30
10	f	2 18	ſ	11 11	F	6 29	tu	4 17
11	ſ	3 10	G	12 0	m	7 16	w	5 5
12	A	4 0	m	morn.	tu	8 6	th	5 57
13	m	4 47	tu	0 47	w	9 0	f	6 52
14	tu	5 35	w	1 30	th	9 55	ſ	7 52
15	w	6 23	th	2 12	f	10 52	D	8 55
16	th	7 11	f	2 53	ſ	11 46	m	9 58
17	f	7 59	ſ	3 34	F	aftern.	tu	10 57
18	ſ	8 48	G	4 15	m	1 35	w	11 55
19	A	9 37	m	4 58	tu	2 26	th	morn.
20	m	10 25	tu	5 43	w	3 16	f	0 47
21	tu	11 9	w	6 32	th	4 7	ſ	1 35
22	w	11 56	th	7 25	f	4 57	D	2 20
23	th	morn.	f	8 22	ſ	5 51	m	3 3
24	f	0 43	ſ	9 22	F	6 46	tu	3 46
25	ſ	1 27	G	10 23	m	7 43	w	4 29
26	A	2 9	m	11 23	tu	8 42	th	5 13
27	m	2 52	tu	aftern.	w	9 39	f	5 59
28	tu	3 37	w	1 17	th	10 33	ſ	6 47
29					f	11 24		

	D.	H.		D.	H.		D.	H.		D.	H.
Laſt Q.	1	9 M.	Firſt Q.	4	0 ---	Full M.	1	6 M.	New M.	5	4 M.
New M.	8	5 M.	Full M.	12	2 M.	Laſt Q.	9	4 M.	Firſt Q.	12	0 ---
Firſt Q.	14	11 N.	Laſt Q.	20	6 M.	New M	16	8 N.	Full M.	19	6 M.
Full M.	23	2 M.	New M.	27	7 M.	Firſt Q.	23	3 A.	Laſt Q.	26	8 N.

MARCH hath XXXI Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755		1756		1757	
		W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	David Ch. (S.	ſ	morn.	m	aftern.	tu	aftern.
2	ecl. inv. 1756	E	3 10	tu	1 7	w	9 32
3	*Clock f. 12 m.*	m	4 4	w	1 53	th	10 23
4		tu	4 56	th	2 37	f	11 11
5	*Day 11 h. long*	w	5 50	f	3 21	ſ	12 3
6		th	6 43	ſ	4 4	B	morn.
7		f	7 35	C	4 49	m	1 2
8		ſ	8 27	m	5 34	tu	1 40
9	*Clock f. 11 m.*	E	9 16	tu	6 20	w	2 29
10		m	10 7	w	7 11	th	3 17
11	*Lion's tail*	tu	10 53	th	8 1	f	4 8
12	S. ecl. inv. 1755	w	11 38	f	8 52	ſ	5 0
13		th	aftern.	ſ	9 45	B	5 57
14	*2 lowermoſt in*	f	1 12	C	10 37	m	6 56
15	*Ch. wain*	ſ	1 46	m	11 30	tu	7 56
16	*Day incr. 4 h.*	E	3 29	tu	morn.	w	8 55
17	St. Patrick.	m	3 13	w	0 22	th	9 53
18		tu	3 58	th	1 15	f	10 48
19	*Clock. f. 8 m.*	w	4 45	f	2 8	ſ	11 40
20	*Day br. 4 h.*	th	5 33	ſ	3 4	B	aftern.
21	S. in ♈, or e-	f	6 26	C	4 0	m	1 20
22	qual day & n.	ſ	7 21	m	4 51	tu	2 6
23	*Clock faſt 7 m.*	E	8 18	tu	5 52	w	2 50
24		m	9 16	w	6 49	th	3 35
25	Lady day	tu	10 15	th	7 44	f	4 22
26		w	11 13	f	8 39	ſ	5 7
27	M. ecl viſ. 1755	th	morn.	ſ	9 29	B	5 54
28	*Clock faſt 5 m.*	f	0 18	C	10 20	m	6 41
29		ſ	1 5	m	11 6	tu	7 34
30	*Day incr. 5 h.*	E	2 2	tu	11 52	w	8 22
31		m	2 56	w	aftern.	th	9 10

1755	D.	H.	1756	D.	H.	1757	D.	H.
Laſt Q.	5	6 M.	New M.	1	2 M.	Full M.	5	12 N.
New M.	12	10 N.	Firſt Q.	9	1 M.	Laſt Q.	13	6 M.
Firſt Q.	21	2 M.	Full M.	16	4 A.	New M.	20	1 M.
Full M.	27	12 N.	Laſt Q.	23	8 M.	Firſt Q.	27	6 E.
			New M.	30	5 A.			

MARCH for ſeven Years.

M. D.	1758 W.D.	1758 ☽'s ſou.	1759 W.D.	1759 ☽'s ſou.	1760 W.D.	1760 ☽'s ſou.	1761 W.D.	1761 ☽'s ſou.
1	w	morn.	th	aftern.	ſ	morn.	D	morn.
2	th	5 12	f	3 3	E	0 11	m	8 29
3	f	6 5	ſ	3 54	m	0 55	tu	9 21
4	ſ	7 1	G	4 45	tu	1 37	w	10 13
5	A	8 1	m	5 37	w	2 19	th	11 5
6	m	9 2	tu	6 30	th	2 59	f	11 52
7	tu	10 4	w	7 24	f	3 41	ſ	aftern.
8	w	11 4	th	8 16	ſ	4 24	D	1 27
9	th	aftern.	f	9 8	E	5 9	m	2 14
10	f	0 57	ſ	9 57	m	5 57	tu	3 3
11	ſ	1 49	G	10 44	tu	6 49	w	3 54
12	A	2 39	m	11 29	w	7 43	th	4 49
13	m	3 29	tu	morn.	th	8 39	f	5 47
14	tu	4 18	w	0 11	f	9 35	ſ	6 49
15	w	5 7	th	0 53	ſ	10 31	D	7 50
16	th	5 57	f	1 35	E	11 25	m	8 50
17	f	6 47	ſ	2 15	m	aftern.	tu	9 48
18	ſ	7 36	G	2 58	tu	1 10	w	10 43
19	A	8 25	m	3 40	w	2 2	th	11 30
20	m	9 13	tu	4 29	th	2 55	f	morn.
21	tu	9 59	w	5 20	f	3 49	ſ	0 16
22	w	10 44	th	6 15	ſ	4 46	D	1 1
23	th	11 29	f	7 11	E	5 44	m	1 44
24	f	morn.	ſ	8 10	m	6 42	tu	2 27
25	ſ	0 12	G	9 9	tu	7 39	w	3 11
26	A	0 56	m	10 8	w	8 34	th	3 58
27	m	1 41	tu	11 5	th	9 25	f	4 45
28	tu	2 27	w	aftern.	f	10 13	ſ	5 34
29	w	3 15	th	0 54	ſ	10 58	D	6 26
30	th	4 6	f	1 48	E	11 41	m	7 18
31	f.	5 1	ſ	2 41	m	12 23	tu	8 10

1758	D.	H.	1759	D.	H.	1760	D.	H.	1761	D.	H.
Laſt Q.	2	11 N.	Firſt Q.	5	10 N.	Full M.	1	9 N.	New M.	6	7 A.
New M.	9	3 A.	Full M.	13	8 N.	Laſt Q.	9	12 N.	Firſt Q.	13	8 N.
Firſt Q.	16	3 A.	Laſt Q.	21	10 N.	New M.	17	8 M.	Full M.	20	7 A.
Full M.	24	8 N.	New M.	28	4 A.	Firſt Q.	23	12 N.	Laſt Q.	28	5 A.
						Full M.	31	2 A.			

APRIL hath XXX Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755 W.D	1755 ☽'s ſou.	1756 W.D.	1756 ☽'s ſou.	1757 W.D.	1757 ☽'s ſou.
1	*Laſt but 2 in the*	tu	morn.	th	aftern.	f	aftern.
2	*G. Bear's tail*	w	4 44	f	2 6	ſ	10 52
3		th	5 40	ſ	2 50	B	11 41
4	*Clock f. 3 m.*	f	6 30	C	3 35	m	morn.
5	*Day 13 hours*	ſ	7 20	m	4 23	tu	0 28
6		E	8 9	tu	5 11	w	1 19
7	*Clock f. 2 m.*	m	8 57	w	6 0	th	2 11
8	*Virgin's Spike*	tu	9 43	th	6 50	f	3 1
9		w	10 28	f	7 40	ſ	3 58
10	*Laſt but 1 in the*	th	11 11	ſ	8 32	B	4 56
11	*G. Bear's tail*	f	11 52	C	9 23	m	5 55
12		ſ	aftern.	m	10 15	tu	6 53
13		E	1 16	tu	11 8	w	7 50
14	*Day br. 3 h.*	m	1 58	w	12 3	th	8 45
15	*Laſt in the G. B's*	tu	2 47	th	morn.	f	9 40
16	*tail [Cl. true*	w	3 35	f	0 57	ſ	10 31
17	*Day inc. 6 h. 30*	th	4 26	ſ	1 56	B	11 18
18		f	5 17	C	2 54	m	aftern.
19	*Clock ſlow 1 m.*	ſ	6 12	m	3 53	tu	0 50
20	Sun in ♉	E	7 10	tu	4 51	w	1 38
21	*Day 14 hours*	m	8 6	w	5 48	th	2 26
22		tu	9 2	th	6 41	f	3 4
23	St. George	w	9 58	f	7 35	ſ	3 56
24	*Arcturus*	th	10 56	ſ	8 24	B	4 46
25	St. Mark	f	11 53	C	9 11	m	5 34
26	*Day inc. 7 h. 7*	ſ	morn.	m	9 56	tu	6 22
27		E	0 46	tu	10 40	w	7 11
28		m	1 43	w	11 24	th	7 59
29	*Clock ſlow 3 m.*	tu	2 40	th	aftern.	f	8 50
30	*Day 14 h. 33 m.*	w	3 35	f	0 52	ſ	9 37

1755	D.	H.	1756	D.	H.	1757	D.	H.
Laſt Q.	3	4 A.	Firſt Q.	7	8 N.	Full M.	4	2 A.
New M.	11	3 A.	Full M.	18	1 M.	Laſt Q.	11	0 ---
Firſt Q.	19	4 A.	Laſt Q.	21	5 A.	New M.	18	1 A.
Full M.	26	9 M.	New M.	29	9 M.	Firſt Q.	26	0 ---

APRIL for ſeven Years.

M. D.	1758		1759		1760		1761	
	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	M's ſou.	W.D.	M's ſou.
1	ſ	morn.	G	aftern.	tu	morn.	w	morn.
2	A	6 57	m	4 30	w	1 3	th	9 49
3	m	7 57	tu	5 25	th	1 45	f	10 38
4	tu	8 56	w	6 19	f	2 27	ſ	11 26
5	w	9 54	th	7 11	ſ	3 11	D	aftern.
6	th	10 49	f	8 2	E	3 58	m	1 3
7	f	11 41	ſ	8 50	m	4 48	tu	1 55
8	ſ	aftern.	G	9 35	tu	5 40	w	2 50
9	A	1 24	m	10 18	w	6 34	th	3 49
10	m	2 15	tu	11 0	th	7 29	f	4 50
11	tu	3 6	w	11 41	f	8 24	ſ	5 52
12	w	3 56	th	morn.	ſ	9 18	D	6 53
13	th	4 47	f	0 22	E	10 5	m	7 50
14	f	5 38	ſ	1 5	m	11 2	tu	8 44
15	ſ	6 23	G	1 49	tu	11 57	w	9 32
16	A	7 16	m	2 35	w	aftern.	th	10 20
17	m	8 3	tu	3 24	th	1 45	f	11 4
18	tu	8 48	w	4 16	f	2 43	ſ	11 47
19	w	9 33	th	5 11	ſ	3 43	D	morn.
20	th	10 17	f	6 8	E	4 42	m	0 30
21	f	11 1	ſ	7 6	m	5 42	tu	1 14
22	ſ	11 45	G	8 3	tu	6 39	w	2 0
23	A	morn.	m	8 58	w	7 31	th	2 46
24	m	0 31	tu	9 53	th	8 20	f	3 35
25	tu	1 20	w	10 47	f	9 5	ſ	4 26
26	w	2 10	th	11 40	ſ	9 48	D	5 17
27	th	3 5	f	aftern.	E	10 30	m	6 8
28	f	4 1	ſ	1 28	m	11 10	tu	7 0
29	ſ	5 0	G	2 25	tu	11 51	w	7 48
30	A	5 58	m	3 21	w	12 31	th	8 36

	D.	H.		D.	H.		D.	H.		D.	H.
Laſt Q.	1	8 M.	Firſt Q.	4	11 M.	Laſt Q.	8	6 A.	New M.	5	8 M.
New M.	7	12 N.	Full M.	12	1 A.	New M.	15	4 A.	Firſt Q.	12	2 M.
Firſt Q.	15	9 M.	Laſt Q.	20	9 M.	Firſt Q.	22	9 M.	Full M.	19	8 M.
Full M.	23	11 M.	New M.	26	12 N.	Full M.	30	5 M.	Laſt Q.	27	11 M.
Laſt Q.	30	3 A.									

M A Y hath XXXI Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755		1756		1757	
		W.D.	M. ſou.	W.D.	M's ſou.	W.D.	M's ſou.
1	St. Phil. & Jac.	th	morn.	ſ	aftern.	B	aftern.
2	*Day br. 2 h.*	f	5 22	C	2 25	m	11 18
3		ſ	6 13	m	3 13	tu	12 9
4	S. ecl. inv. 1761	E	6 54	tu	4 0	w	morn.
5		m	7 47	w	4 50	th	1 3
6	*Clock ſlow 3 m.*	tu	8 32	th	5 38	f	2 1
7		w	9 14	f	6 29	ſ	3 0
8	*Day 15 hours*	th	9 56	ſ	7 19	B	4 0
9	*Day inc. 7 h. 30*	f	10 38	C	8 9	m	4 58
10		ſ	11 22	m	9 0	tu	5 55
11	*N. Scal.* ♎	E	aftern.	tu	9 53	w	6 50
12	Old May day	m	0 51	w	10 45	th	7 43
13	*Clock ſlow 4 m.*	tu	1 40	th	11 44	f	8 34
14	*Brighteſt* ✱ *in*	w	2 29	f	morn.	ſ	9 20
15	*the crown*	th	3 20	ſ	0 44	B	10 5
16		f	4 12	C	1 45	m	10 51
17		ſ	5 6	m	2 45	tu	11 35
18	M. ecl. viſ. 1761	E	6 1	tu	3 44	w	aftern.
19	*Day 15 h. 34 m.*	m	6 55	w	4 42	th	1 6
20		tu	7 49	th	5 37	f	1 53
21	Sun eters ♊	w	8 43	f	6 27	ſ	2 40
22		th	9 38	ſ	7 15	B	3 29
23		f	10 35	C	8 0	m	4 18
24	*Clock ſlow 4 m.*	ſ	11 31	m	8 44	tu	5 7
25		E	morn.	tu	9 27	w	5 55
26	*Scorpion's heart*	m	0 26	w	10 11	th	6 42
27	*No real night*	tu	1 23	th	10 53	f	7 30
28	*Day 16 hours*	w	2 20	f	11 39	ſ	8 17
29	M. ecl. viſ. 1760	th	3 13	ſ	aftern.	B	9 6
30		f	4 7	C	1 11	m	9 59
31	*Clock ſlow 3 m.*	ſ	4 57	m	2 0	tu	10 54

	D.	H.		D.	H.		D.	H.
Laſt Q.	3	4 M.	Firſt Q.	7	0 ...	Full M.	3	12 N.
New M.	11	8 M.	Full M.	14	9 M.	Laſt Q.	10	6 A.
Firſt Q.	19	2 M.	Laſt Q.	21	1 M.	New M.	18	2 M.
Full M.	25	4 A.	New M.	28	12 N.	Firſt Q.	26	5 M.

MAY for ſeven Years.

M. D.	1758 W.D.	1758 ☽'s ſou.	1759 W.D.	1759 ☽'s ſou.	1760 W.D.	1760 ☽'s ſou.	1761 W.D.	1761 ☽'s ſou.
1	m	morn.	tu	aftern.	th	morn.	f	morn.
2	tu	7 53	w	5 12	f	1 15	ſ	10 10
3	w	8 47	th	6 4	ſ	2 2	D	11 0
4	th	9 39	f	6 53	E	2 51	m	11 50
5	f	10 29	ſ	7 40	m	3 42	tu	aftern.
6	ſ	11 20	G	8 24	tu	4 35	w	1 44
7	A	aftern.	m	9 6	w	5 28	th	2 46
8	m	1 1	tu	9 47	th	6 21	f	3 50
9	tu	1 52	w	10 28	f	7 14	ſ	4 53
10	w	2 44	th	11 9	ſ	8 5	D	5 53
11	th	3 38	f	11 53	E	8 56	m	6 48
12	f	4 26	ſ	morn.	m	9 47	tu	7 38
13	ſ	5 15	G	0 38	tu	10 39	w	8 24
14	A	6 3	m	1 27	w	11 33	th	9 8
15	m	6 49	tu	2 18	th	aftern.	f	9 50
16	tu	7 33	w	3 11	f	1 31	ſ	10 33
17	w	8 17	th	4 8	ſ	2 34	D	11 16
18	th	9 0	f	5 5	E	3 35	m	morn.
19	f	9 44	ſ	6 0	m	4 34	tu	0 0
20	ſ	10 29	G	6 55	tu	5 30	w	0 45
21	A	11 16	m	7 48	w	6 21	th	1 34
22	m	12 7	tu	8 38	th	7 8	f	2 24
23	tu	morn.	w	9 31	f	7 51	ſ	3 15
24	w	1 1	th	10 23	ſ	8 33	D	4 6
25	th	1 58	f	11 16	E	9 12	m	4 56
26	f	2 57	ſ	aftern.	m	9 53	tu	5 44
27	ſ	3 56	G	1 9	tu	10 34	w	6 31
28	A	4 55	m	2 6	w	11 17	th	7 17
29	m	5 51	tu	3 3	th	12 2	f	8 2
30	tu	6 45	w	3 57	f	morn.	ſ	8 49
31	w	7 36	th	4 49	ſ	0 50	D	9 37

1758	D.	H.	1759	D.	H.	1760	D.	H.	1761	D.	H.
New M.	7	10 M.	Firſt Q.	4	2 M.	Laſt Q.	8	8 M.	New M.	4	6 A.
Firſt Q.	15	3 M.	Full M.	12	5 M.	New M.	15	1 M.	Firſt Q.	11	9 M.
Full M.	22	11 N.	Laſt Q.	19	5 A.	Firſt Q.	21	9 N.	Full M.	18	10 N.
Laſt Q.	29	8 A.	New M.	26	8 M.	Full M.	29	9 N.	Laſt Q.	27	2 M.

JUNE hath XXX Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755		1756		1757	
		W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	*Day inc. 8 h. 30*	E	morn.	tu	aftern.	w	aftern.
2		m	6 29	w	3 36	th	12 46
3	S. ecl. inv. 1761	tu	7 6	th	4 26	f	morn.
4		w	7 53	f	5 15	ſ	1 49
5	*Clock f. 2 m.*	th	8 34	ſ	6 3	B	2 50
6	*Day 16 h. 14*	f	9 6	C	6 52	m	3 48
7		ſ	9 59	m	7 40	tu	4 46
8		E	10 46	tu	8 32	w	5 43
9		m	11 36	w	9 26	th	6 36
10	*Clock ſlow 1 m.*	tu	aftern.	th	10 24	f	7 20
11	St. Barnabas	w	1 15	f	11 23	ſ	8 3
12	*Serpent's head*	th	2 8	ſ	morn.	B	8 46
13	S. ecl. viſ. 1760	f	3 4	C	0 25	m	9 30
14		ſ	3 59	m	1 27	tu	10 16
15	*Clocks go true*	E	4 52	tu	2 27	w	10 58
16		m	5 44	w	3 25	th	11 47
17	No real night,	tu	6 33	th	4 19	f	aftern.
18	but twilight.	w	7 30	f	5 9	ſ	1 23
19		th	8 19	ſ	5 55	B	2 12
20	*Clock f. 1 m.*	f	9 11	C	6 39	m	3 4
21	Sun enters ♋	ſ	10 1	m	7 24	tu	3 50
22	Longeſt day	E	10 56	tu	8 7	w	4 34
23		m	11 53	w	8 49	th	5 22
24	S. ecl. inv. 1759	tu	morn.	th	9 32	f	6 4
25		w	0 50	f	10 17	ſ	6 51
26	*Clock f. 2 m.*	th	1 44	ſ	11 4	B	7 39
27	*ſharp*	f	2 38	C	11 51	m	8 29
28	*Brighteſt in the*	ſ	3 29	m	aftern.	tu	9 22
29	St Peter.	E	4 15	tu	1 29	w	10 18
30	*Clock faſt 3 m.*	m	5 7	w	2 17	th	11 19

1755	D.	H.	1756	D.	H.	1757	D.	H.
Laſt Q.	1	7 A.	Firſt Q.	5	12 N.	Full M.	2	9 M.
New M.	9	10 N.	Full M.	12	4 A.	Laſt. Q.	9	1 M.
Firſt Q.	17	9 M.	Laſt Q.	19	1 A.	New M.	16	4 A.
Full M.	23	12 N.	New M.	27	3 A.	Firſt Q.	24	8 A.

JUNE for ſeven Years.

M. D.	1758 W.D.	1758 ☽'s ſou.	1759 W.D.	1759 ☽'s ſou.	1760 W.D.	1760 ☽'s ſou.	1761 W.D.	1761 ☽'s ſou.
1	th	morn.	f	aftern.	E	morn.	m	morn.
2	f	9 14	ſ	6 22	m	2 32	tu	11 17
3	ſ	10 3	G	7 4	tu	3 25	w	aftern.
4	A	10 52	m	7 45	w	4 17	th	1 34
5	m	11 43	tu	8 26	th	5 8	f	2 40
6	tu	aftern.	w	9 7	f	5 59	ſ	3 43
7	w	1 26	th	9 49	ſ	6 48	D	4 41
8	th	2 17	f	10 33	E	7 37	m	5 34
9	f	3 7	ſ	11 20	m	8 26	tu	6 22
10	ſ	3 56	G	12 11	tu	9 17	w	7 6
11	A	4 42	m	morn.	w	10 12	th	7 49
12	m	5 27	tu	1 5	th	11 10	f	8 31
13	tu	6 10	w	2 2	f	aftern.	ſ	9 13
14	w	6 52	th	2 58	ſ	1 15	D	9 56
15	th	7 35	f	3 55	E	2 18	m	10 41
16	f	8 19	ſ	4 49	m	3 17	tu	11 28
17	ſ	9 4	G	5 42	tu	4 11	w	morn.
18	A	9 53	m	6 32	w	5 0	th	0 13
19	m	10 45	tu	7 22	th	5 45	f	1 8
20	tu	11 42	w	8 12	f	6 28	ſ	2 0
21	w	morn.	th	9 3	ſ	7 9	D	2 49
22	th	0 41	f	9 55	E	7 49	m	3 37
23	f	1 42	ſ	10 50	m	8 29	tu	4 23
24	ſ	2 43	G	11 47	tu	9 10	w	5 8
25	A	3 42	m	aftern.	w	9 55	th	5 53
26	m	4 37	tu	1 41	th	10 42	f	6 37
27	tu	5 29	w	2 34	f	11 31	ſ	7 22
28	w	6 21	th	3 25	ſ	morn.	D	8 11
29	th	7 8	f	4 11	E	0 23	m	9 5
30	f	7 55	ſ	4 55	m	1 16	tu	10 3

1758	D.	H.	1759	D.	H.	1760	D.	H.	1761	D.	H.
New M.	5	9 N.	Firſt Q.	2	6 A.	Laſt Q.	6	5 A.	New M.	3	2 M.
Firſt Q.	13	9 M.	Full M.	10	7 A.	New M.	13	8 M.	Firſt Q.	9	4 A.
Full M.	21	8 M.	Laſt Q.	17	11 N.	Firſt Q.	20	9 M.	Full M.	17	1 A.
Laſt Q.	28	1 M.	New M.	24	5 A.	Full M.	28	1 A.	Laſt Q.	25	3 A.

JULY hath XXXI Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755		1756		1757	
		W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1		tu	morn.	th	aftern.	f	morn.
2		w	6 38	f	3 55	ſ	0 24
3	*Clock f. 4 m.*	th	7 5	ſ	4 43	B	1 29
4	*Day* 16 *h.* 16 *m.*	f	7 52	C	5 31	m	2 30
5	S. ecl. inv. 1758	ſ	8 33	m	6 20	tu	3 29
6	*Day decr.* 12 *m.*	E	9 19	tu	7 10	w	4 26
7		m	10 5	w	8 3	th	5 12
8		tu	11 0	th	9 0	f	5 56
9	*Clock f.* 5 *m.*	w	11 53	f	10 0	ſ	6 41
10		th	aftern.	ſ	11 0	B	7 24
11		f	1 39	C	morn.	m	8 6
12	*Day decr.* 22 *m.*	ſ	2 32	m	0 3	tu	8 49
13		E	3 27	tu	1 2	w	9 34
14		m	4 19	w	2 0	th	10 26
15	*Day* 16 *hours*	tu	5 11	th	2 54	f	11 13
16	*Brighteſt Star in the Eagle*	w	6 4	f	3 43	ſ	12 58
17		th	6 58	ſ	4 29	B	aftern.
18		f	7 51	C	5 14	m	1 36
19		ſ	8 43	m	5 54	tu	2 20
20	M. ecl. in. 1758	E	9 38	tu	6 42	w	3 12
21		m	10 33	w	7 24	th	3 55
22		tu	11 28	th	8 9	f	4 41
23	☉ enters ♌	w	morn.	f	8 54	ſ	5 26
24		th	0 20	ſ	9 39	B	6 12
25	St. James	f	1 11	C	10 29	m	7 0
26	*Day* 15 *h.* 30 *m.*	ſ	2 3	m	11 18	tu	7 56
27		E	2 51	tu	aftern.	w	8 48
28	*Swan's tail*	m	3 36	w	1 0	th	9 49
29		tu	4 16	th	1 48	f	10 56
30	M. ecl. viſ. 1757	w	5 0	f	2 35	ſ	12 2
31	*Dog Days begin*	th	5 43	ſ	3 24	B	morn.
		 Laſt Q. New M. Firſt Q. Full M. Laſt Q.	D. H. 1 11 M. 9 11 M. 16 2 A. 23 10 M. 31 4 M.	 Firſt Q. Full M. Laſt Q. New M.	D. H. 4 9 M. 11 11 N. 19 2 M. 27 6 M.	 Full M. Laſt Q. New M. Firſt Q. Full M.	D. H. 1 4 A. 8 9 M. 16 7 M. 24 7 M. 30 12 N.

JULY for ſeven Years.

M. D.	1758 W.D.	1758 ☽'s ſou.	1759 W.D.	1759 ☽'s ſou.	1760 W.D.	1760 ☽'s ſou.	1761 W.D.	1761 ☽'s ſou.
1	ſ	morn.	G	aftern.	tu	morn.	w	11 6
2	A	9 31	m	6 16	w	3 1	th	aftern.
3	m	10 22	tu	6 57	th	3 51	f	1 20
4	tu	11 13	w	7 39	f	4 40	ſ	2 23
5	w	12 3	th	8 22	ſ	5 28	D	3 19
6	th	aftern.	f	9 8	E	6 15	m	4 11
7	f	1 44	ſ	9 57	m	7 3	tu	4 58
8	ſ	2 31	G	10 50	tu	7 55	w	5 42
9	A	3 17	m	11 46	w	8 49	th	6 24
10	m	4 0	tu	morn.	th	9 48	f	7 6
11	tu	4 43	w	0 44	f	10 50	ſ	7 49
12	w	5 25	th	1 42	ſ	11 53	D	8 33
13	th	6 7	f	2 38	E	aftern.	m	9 19
14	f	6 50	ſ	3 33	m	1 52	tu	10 8
15	ſ	7 36	G	4 25	tu	2 45	w	10 58
16	A	8 26	m	5 14	w	3 33	th	11 49
17	m	9 20	tu	6 3	th	4 17	f	morn.
18	tu	10 18	w	6 52	f	4 59	ſ	0 40
19	w	11 19	th	7 43	ſ	5 40	D	1 29
20	th	morn.	f	8 36	E	6 20	m	2 16
21	f	0 20	ſ	9 31	m	7 2	tu	3 1
22	ſ	1 23	G	10 27	tu	7 45	w	3 45
23	A	2 22	m	11 24	w	8 31	th	4 29
24	m	3 18	tu	aftern.	th	9 19	f	5 13
25	tu	4 10	w	1 11	f	10 11	ſ	6 0
26	w	5 0	th	1 59	ſ	11 4	D	6 48
27	th	5 48	f	2 45	E	11 56	m	7 42
28	f	6 36	ſ	3 28	m	morn.	tu	8 42
29	ſ	7 25	G	4 9	tu	0 49	w	9 46
30	A	8 14	m	4 49	w	1 43	th	10 53
31	m	9 4	tu	5 29	th	2 33	f	11 58

1758	D.	H.	1759	D.	H.	1760	D.	H.	1761	D.	H.
New M.	5	9 M.	Firſt Q.	2	0 --	Laſt Q.	5	12 N.	New M.	2	8 M.
Firſt Q.	13	1 A.	Full M.	10	6 M.	New M.	12	4 A.	Firſt Q.	9	2 M.
Full M.	20	5 A.	Laſt Q.	17	3 M.	Firſt Q.	19	12 N.	Full M.	17	5 M.
Laſt Q.	27	7 M.	New M.	24	4 M.	Full M.	28	2 M.	Laſt Q.	25	3 M.
									New M.	31	3 A.

AUGUST hath XXXI Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755 W.D.	1755 ☽'s ſou.	1756 W.D.	1756 ☽'s ſou.	1757 W.D.	1757 ☽'s ſou.
1	Lammas day	f	morn.	C	aftern.	m	morn.
2	*Day dec. 1 h. 15*	ſ	7 11	m	5 2	tu	2 3
3		E	8 4	tu	5 50	w	2 54
4		m	8 50	w	6 44	th	3 45
5		tu	9 40	th	7 40	f	4 37
6	*Day 15 h. long*	w	10 37	f	8 39	ſ	5 19
7		th	11 30	ſ	9 40	B	6 0
8		f	aftern.	C	10 40	m	6 47
9	*Clock f. 5 m.*	ſ	1 24	m	11 40	tu	7 31
10	*Day br. 2 h.*	E	2 15	tu	morn.	w	8 16
11		m	3 8	w	0 35	th	9 4
12	Old Lammas	tu	4 2	th	1 29	f	9 52
13		w	4 56	f	2 19	ſ	10 43
14	☉ecl. inv. 1757	th	5 48	ſ	3 5	B	11 32
15	*Day dec. 2 hours*	f	6 37	C	3 51	m	aftern.
16	*Day 14 h. 30 m.*	ſ	7 28	m	4 36	tu	1 10
17		E	8 23	tu	5 18	w	2 3
18		m	9 16	w	6 3	th	2 45
19		tu	10 11	th	6 48	f	3 30
20	*Clock f. 3 m.*	w	11 4	f	7 36	ſ	4 14
21	*Day br. 2 h. 30 m.*	th	12 2	ſ	8 23	B	5 2
22		f	morn.	C	9 12	m	5 53
23	Sun ent. ♍	ſ	0 46	m	10 2	tu	6 45
24	St. Bartholom.	E	1 29	tu	10 52	w	7 47
25	☉ecl. inv. 1756	m	2 15	w	11 44	th	8 49
26		tu	2 59	th	aftern.	f	9 51
27	*Clock f. 1. m.*	w	3 38	f	1 21	ſ	10 54
28		th	4 19	ſ	2 10	B	11 57
29		f	5 2	C	3 0	m	morn.
30	*Day dec. 2 h. 56*	ſ	5 48	m	3 51	tu	0 48
31	*Day 13 h. 30 m.*	E	6 38	tu	4 43	w	1 44

1755	D.	H.	1756	D.	H.	1757	D.	H.
New M.	7	11 N.	Firſt Q.	3	4 A.	Laſt Q.	6	8 N.
Firſt Q.	14	7 N.	Full M.	10	7 M.	New M.	14	10 N.
Full M.	21	9 N.	Laſt Q.	17	6 A.	Firſt Q.	22	4 A.
Laſt Q.	29	10 N.	New M.	25	7 N.	Full M.	29	7 M.

AUGUST for ſeven Years.

M. D.	1758		1759		1760		1761	
	W.D.	M's ſou.	W.D.	M's ſou.	W.D.	M's ſou.	W.D.	M's ſou.
1	tu	morn.	w	aftern.	f	morn.	ſ	aftern.
2	w	10 46	th	6 56	ſ	4 9	D	1 55
3	th	11 35	f	7 43	E	4 57	m	2 45
4	f	aftern.	ſ	8 34	m	5 46	tu	3 32
5	ſ	1 10	G	9 29	tu	6 38	w	4 16
6	A	1 53	m	10 27	w	8 34	th	5 0
7	m	2 37	tu	11 26	th	7 33	f	5 43
8	tu	3 19	w	morn.	f	9 33	ſ	6 27
9	w	4 1	th	0 22	ſ	10 36	D	7 13
10	th	4 43	f	1 20	E	11 35	m	8 1
11	f	5 28	ſ	2 15	m	aftern.	tu	8 51
12	ſ	6 14	G	3 8	tu	1 22	w	9 43
13	A	7 5	m	3 58	w	2 9	th	10 34
14	m	8 0	tu	4 48	th	2 52	f	11 24
15	tu	9 0	w	5 39	f	3 33	ſ	morn.
16	w	10 0	th	6 31	ſ	4 15	D	0 12
17	th	11 3	f	7 25	E	4 56	m	0 58
18	f	12 5	ſ	8 20	m	5 39	tu	1 43
19	ſ	morn.	G	9 16	tu	6 25	w	2 27
20	A	1 3	m	10 10	w	7 12	th	3 11
21	m	2 0	tu	11 4	th	8 2	f	3 57
22	tu	2 53	w	11 52	f	8 55	ſ	4 44
23	w	3 43	th	aftern.	ſ	9 49	D	5 39
24	th	4 33	f	1 25	E	10 43	m	6 32
25	f	5 23	ſ	2 7	m	11 37	tu	7 32
26	ſ	6 13	G	2 47	tu	morn.	w	8 36
27	A	7 3	m	3 28	w	0 28	th	9 40
28	m	7 54	tu	4 9	th	1 19	f	10 44
29	tu	8 45	w	4 52	f	2 8	ſ	11 42
30	w	9 35	th	5 38	ſ	2 57	D	aftern.
31	th	10 24	f	6 26	E	3 46	m	1 25

	D.	H.
New M.	3	12 N.
First Q.	12	3 M.
Full M.	18	12 N.
Laſt Q.	25	4 A.

	D.	H.
First Q.	1	3 M.
Full M.	8	3 A.
Laſt Q.	15	8 M.
New M.	22	5 A.
First Q.	30	8 N.

	D.	H.
Laſt Q.	4	5 M.
New M.	11	1 M.
First Q.	18	5 A.
Full M.	26	1 A.

	D.	H.
First Q.	7	3 A.
Full M.	15	7 A.
Laſt Q.	23	7 M.
New M.	29	11 N.

SEPTEMBER hath XXX Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755		1756		1757	
		W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	*Fomahaut*	m	morn.	w	aftern.	th	morn.
2	*Day 13 h. 24 m.*	tu	8 19	th	6 35	f	3 16
3	*Clock ſlow 1 m.*	w	9 15	f	7 33	ſ	4 3
4	*Day dec. 3 h. 13*	th	10 15	ſ	8 33	B	4 50
5	*1ſt * in Pega-*	f	11 13	C	9 31	m	5 38
6	*ſus's wing.* (☉	ſ	aftern.	m	10 28	tu	6 21
7	ecl. inv. 1755	E	1 4	tu	11 22	w	7 7
8	Nat. V. Mary	m	2 1	w	morn.	th	7 56
9	Dog days end	tu	2 56	th	0 13	f	8 43
10	*Clock ſlow 3 m.*	w	3 43	f	1 1	ſ	9 35
11		th	4 38	ſ	1 48	B	10 22
12	*Day br. 3 h. 36*	f	5 31	C	2 34	m	11 11
13		ſ	6 23	m	3 20	tu	12 1
14		E	7 19	tu	4 5	w	aftern.
15	*Clock ſl. 5 m.*	m	8 11	w	4 50	th	1 31
16	*Day 13 h. 30 m.*	tu	9 4	th	5 37	f	2 20
17		w	10 0	f	6 24	ſ	3 5
18	*Day dec. 4 h. 8*	th	10 52	ſ	7 13	B	3 56
19		f	11 40	C	8 4	m	4 46
20	M. ecl. inv. 1755	ſ	morn.	m	8 53	tu	5 43
21	St. Matthew	E	0 17	tu	9 43	w	6 39
22	Sun enters ♎	m	0 59	w	10 32	th	7 40
23	Equal day & n.	tu	1 47	th	11 22	f	8 41
24	*Andromeda's H.*	w	2 31	f	aftern.	ſ	9 42
25		th	3 8	ſ	1 3	B	10 41
26	*End of Pega-*	f	3 54	C	1 55	m	11 40
27	*ſus's wing*	ſ	4 39	m	2 48	tu	morn.
28	*Clock ſl. 10 m.*	E	5 29	tu	3 43	w	0 26
29	St. Michael	m	6 18	w	4 39	th	1 14
30	*Day br. 4 h. 16*	tu	7 13	th	5 36	f	2 5
		D. H. New M. 6 8 M. Firſt Q. 13 1 M. Full M. 20 11 M. Laſt Q. 28 3 A.		D. H. Firſt Q. 1 9 N. Full M. 8 6 A. Laſt Q. 16 0 ÷ New M. 24 7 M.		D. H. Laſt Q. 5 10 M. New M. 13 2 A. Firſt Q. 20 12 N. Full M. 27 4 A.	

SEPTEMBER for ſeven Years.

M. D.	1758		1759		1760		1761	
	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	M's ſou.	W.D.	M's ſou.
1	f	morn.	ſ	aftern.	m	morn.	tu	aftern.
2	ſ	11 56	G	8 14	tu	5 33	w	2 56
3	A	aftern.	m	9 13	w	6 30	th	3 40
4	m	1 22	tu	10 12	th	7 29	f	4 25
5	tu	2 4	w	11 10	f	8 30	ſ	5 12
6	w	2 46	th	12 7	ſ	9 29	D	6 0
7	th	3 29	f	morn.	E	10 26	m	6 50
8	f	4 15	ſ	1 9	m	11 18	tu	7 41
9	ſ	5 3	G	1 55	tu	12 6	w	8 31
10	A	5 55	m	2 47	w	aftern.	th	9 23
11	m	6 50	tu	3 39	th	1 34	f	10 13
12	tu	7 49	w	4 31	f	2 16	ſ	11 0
13	w	8 50	th	5 27	ſ	2 58	D	11 46
14	th	9 52	f	6 22	E	3 41	m	morn.
15	f	10 53	ſ	7 18	m	4 25	tu	0 31
16	ſ	11 50	G	8 13	tu	5 11	w	1 16
17	A	morn.	m	9 5	w	6 0	th	2 2
18	m	0 45	tu	9 57	th	6 52	f	2 49
19	tu	1 39	w	10 45	f	7 45	ſ	3 40
20	w	2 31	th	11 31	ſ	8 39	D	4 34
21	th	3 22	f	aftern.	E	9 33	m	5 33
22	f	4 14	ſ	0 51	m	10 25	tu	6 34
23	ſ	5 5	G	1 34	tu	11 17	w	7 37
24	A	5 57	m	2 15	w	12 7	th	8 39
25	m	6 48	tu	2 57	th	morn.	f	9 38
26	tu	7 40	w	3 40	f	0 58	ſ	10 32
27	w	8 29	th	4 28	ſ	1 49	D	11 22
28	th	9 17	f	5 18	E	2 41	m	aftern.
29	f	10 3	ſ	6 11	m	3 36	tu	0 56
30	ſ	10 47	G	7 7	tu	4 34	w	1 41

	D.	H.		D.	H.		D.	H.		D.	H.
New M.	2	3 A.	Full M.	6	12 N.	Laſt Q.	2	10 M.	Firſt Q.	6	8 M.
Firſt Q.	10	3 A.	Laſt Q.	13	3 A.	New M.	9	0 --	Full M.	14	9 M.
Full M.	17	8 M.	New M.	21	8 M.	Firſt Q.	17	11 M.	Laſt Q.	21	2 A.
Laſt Q.	24	5 M.	Firſt Q.	29	10 M.	Full M.	24	12 N.	New M.	28	9 M.

OCTOBER hath XXXI Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755 W.D.	1755 ☽'s ſou.	1756 W.D.	1756 ☽'s ſou.	1757 W.D.	1757 ☽'s ſou.
1	*Day 11 h. 30 m.*	w	morn.	f	aftern.	ſ	morn.
2		th	9 4	ſ	7 32	B	3 41
3	*Day dec. 5h. 7m.*	f	10 1	C	8 28	m	4 24
4	*Clock ſl. 11 m.*	ſ	11 57	m	9 21	tu	5 11
5	*Day br. 4 h. 27*	E	11 53	tu	10 13	w	6 3
6	*Southerm. in An-*	m	aftern.	w	11 2	th	6 52
7	*dromeda's Gird.*	tu	1 49	th	11 51	f	7 41
8		w	2 43	f	morn.	ſ	8 28
9	*Day 11 hours*	th	3 37	ſ	0 37	B	9 16
10	Old Michaelm.	f	4 31	C	1 22	m	10 5
11		ſ	5 25	m	2 7	tu	10 49
12	*Day br. 4 h. 40*	E	6 19	tu	2 54	w	11 40
13		m	7 16	w	3 40	th	aftern.
14	*Clock ſl. 14 m.*	tu	8 8	th	4 27	f	1 14
15		w	8 58	f	5 15	ſ	2 3
16	*Day dec. 6 h.*	th	9 45	ſ	6 3	B	2 55
17		f	10 31	C	6 52	m	3 50
18	St. Luke	ſ	11 13	m	7 42	tu	4 44
19	*Clock ſl. 15 m.*	E	11 56	tu	8 30	w	5 43
20		m	morn.	w	9 18	th	6 41
21	*Day br. 5 h.*	tu	0 32	th	10 10	f	7 38
22		w	1 15	f	11 0	ſ	8 36
23	☉ enters ♏	th	1 56	ſ	11 50	B	9 28
24	*Day 10 hours*	f	2 38	C	aftern.	m	10 20
25	Criſpin	ſ	3 29	m	1 42	tu	11 11
26	*Clock ſl. 16 m.*	E	4 18	tu	2 39	w	12 2
27	S. ecl. inv. 1761	m	5 8	w	3 38	th	morn.
28	St. Sim. & Jude	tu	6 5	th	4 38	f	0 45
29		w	6 58	f	5 38	ſ	1 29
30	*Day br. 5h. 14m.*	th	7 53	ſ	6 34	B	2 18
31		f	8 50	C	7 27	m	3 5

	D. H.		D. H.		D. H.
New M.	5 6 A.	First Q.	1 4 M.	Last Q.	5 4 M.
First Q.	12 9 M.	Full M.	8 7 M.	New M.	13 5 M.
Full M.	20 4 M.	Last Q.	16 8 M.	First Q.	20 7 M.
Last Q.	28 7 M.	New M.	23 7 N.	Full M.	27 4 M.
		First Q.	30 11 M.		

OCTOBER for ſeven Years.

M. D.	1758		1759		1760		1761	
	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	A	11 30	m	aftern.	w	morn.	th	aftern.
2	m	aftern.	tu	9 1	th	6 33	f	3 13
3	tu	0 54	w	9 59	f	7 32	ſ	4 1
4	w	1 37	th	10 55	ſ	8 29	D	4 51
5	th	2 22	f	11 47	E	9 22	m	5 43
6	f	3 9	ſ	morn.	m	10 10	tu	6 34
7	ſ	3 59	G	0 43	tu	10 56	w	7 25
8	A	4 52	m	1 37	w	11 40	th	8 14
9	m	5 49	tu	2 32	th	aftern.	f	9 2
10	tu	6 47	w	3 29	f	1 3	ſ	9 49
11	w	7 47	th	4 25	ſ	1 45	D	10 34
12	th	8 45	f	5 22	E	2 29	m	11 19
13	f	9 43	ſ	6 16	m	3 14	tu	12 5
14	ſ	10 38	G	7 11	tu	4 2	w	morn.
15	A	11 32	m	8 4	w	4 52	th	0 53
16	m	morn.	tu	8 52	th	5 44	f	1 43
17	tu	0 25	w	9 37	f	6 37	ſ	2 38
18	w	1 18	th	10 20	ſ	7 30	D	3 37
19	th	2 10	f	11 1	E	8 22	m	4 38
20	f	3 3	ſ	11 42	m	9 13	tu	5 40
21	ſ	3 57	G	aftern.	tu	10 3	w	6 42
22	A	4 50	m	1 10	w	10 53	th	7 40
23	m	5 42	tu	1 49	th	11 44	f	8 33
24	tu	6 28	w	2 33	f	morn.	ſ	9 24
25	w	7 18	th	3 22	ſ	0 37	D	10 11
26	th	8 8	f	4 13	E	1 32	m	10 57
27	f	8 52	ſ	5 7	m	2 31	tu	11 42
28	ſ	9 35	G	6 2	tu	3 32	w	aftern.
29	A	10 17	m	6 58	w	4 34	th	1 12
30	m	11 0	tu	7 53	th	5 35	f	2 0
31	tu	11 42	w	8 46	f	6 32	ſ	2 50

	D.	H.
New M.	8	2 M.
Firſt Q.	10	1 M.
Full M.	16	4 A.
Laſt Q.	23	8 N.

	D.	H.
Full M.	6	9 M.
Laſt Q.	13	2 M.
New M.	21	1 M.
Firſt Q.	29	2 M.

	D.	H.
Laſt Q.	1	5 A.
New M.	9	2 M.
Firſt Q.	17	6 M.
Full M.	24	10 M.
Laſt Q.	31	2 M.

	D.	H.
Firſt Q.	6	3 M.
Full M.	13	11 N.
Laſt Q.	20	9 N.
New M.	27	10 N.

NOVEMBER hath XXX Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755 W.D.	1755 ☽'s ſou.	1756 W.D.	1756 ☽'s ſou.	1757 W.D.	1757 ☽'s ſou.
1	All Saints	ſ	morn.	m	aftern.	tu	morn.
2	*Day 9 h. 30 m.*	E	10 41	tu	9 4	w	4 40
3	*Day dec. 7 h.*	m	11 36	w	9 52	th	5 34
4		tu	aftern.	th	10 38	f	6 22
5	Powder Plot	w	1 22	f	11 23	ſ	7 9
6	*Day br. 5 h. 24*	th	2 20	ſ	morn.	B	7 59
7		f	3 18	C	0 8	m	8 48
8	*Algol*	ſ	4 16	m	0 54	tu	9 34
9	*Day 9 hours*	E	5 14	tu	1 39	w	10 22
10	*Clock ſl. 16 m.*	m	6 7	w	2 26	th	11 9
11		tu	6 58	th	3 14	f	11 56
12	Old Allhallows	w	7 48	f	4 3	ſ	aftern.
13		th	8 30	ſ	4 51	B	1 46
14		f	9 13	C	5 38	m	2 43
15	*Clock ſl. 15 m.*	ſ	9 55	m	6 27	tu	3 42
16		E	10 26	tu	7 14	w	4 35
17	*Seven Stars*	m	11 13	w	8 2	th	5 31
18		tu	morn.	th	8 50	f	6 29
19	*Day 8 h. 30 m.*	w	0 2	f	9 40	ſ	7 25
20	*Day dec. 8 h.*	th	0 42	ſ	10 33	B	8 17
21	*Clock ſl. 14 m.*	f	1 30	C	11 28	m	9 5
22	M. ecl. viſ. 1760	ſ	2 17	m	aftern.	tu	9 53
23	Sun in ♐	E	3 6	tu	1 26	w	10 42
24	*Day br. 5 h. 47 m.*	m	4 0	w	2 27	th	11 30
25		tu	4 54	th	3 29	f	12 13
26	S. ecl. inv. 1761	w	5 47	f	4 28	ſ	morn.
27	*Aldebaran*	th	6 40	ſ	5 23	B	0 54
28		f	7 32	C	6 14	m	1 45
29	*Clock ſl. 11 m.*	ſ	8 17	m	7 3	tu	2 33
30	St. Andrew	E	9 12	tu	7 49	w	3 25

1755	D.	H.	1756	D.	H.	1757	D.	H.
New M.	4	4 M.	Full M.	6	11 N.	Laſt. Q.	3	12 N.
Firſt Q.	10	9 N.	Laſt Q.	15	3 M.	New M.	11	6 N.
Full M.	18	10 N.	New M.	22	5 M.	Firſt Q.	18	3 A.
Laſt Q.	26	9 N.	Firſt Q.	28	9 N.	Full M.	25	6 N.

NOVEMBER for ſeven Years.

M. D.	1758		1759		1760		1761	
	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	w	aftern.	th	aftern.	ſ	morn.	D	aftern.
2	th	1 13	f	10 33	E	8 17	m	4 22
3	f	2 2	ſ	11 26	m	9 1	tu	5 23
4	ſ	2 55	G	12 21	tu	9 44	w	6 13
5	A	3 50	m	morn.	w	10 25	th	7 1
6	m	4 47	tu	1 18	th	11 8	f	7 49
7	tu	5 45	w	2 16	f	11 48	ſ	8 32
8	w	6 42	th	3 15	ſ	aftern.	D	9 16
9	th	7 38	f	4 14	E	1 16	m	10 1
10	f	8 32	ſ	5 10	m	2 2	tu	10 48
11	ſ	9 24	G	6 4	tu	2 51	w	11 38
12	A	10 16	m	6 54	w	3 42	th	morn.
13	m	11 7	tu	7 39	th	4 34	f	0 31
14	tu	11 59	w	8 23	f	5 25	ſ	1 29
15	w	morn.	th	9 4	ſ	6 16	D	2 25
16	th	0 53	f	9 45	E	7 5	m	3 34
17	f	1 47	ſ	10 24	m	7 54	tu	4 38
18	ſ	2 41	G	11 5	tu	8 42	w	5 38
19	A	3 34	m	11 48	w	9 31	th	6 33
20	m	4 26	tu	aftern.	th	10 22	f	7 23
21	tu	5 16	w	1 20	f	11 16	ſ	8 11
22	w	6 4	th	2 10	ſ	morn.	D	8 55
23	th	6 49	f	3 3	E	0 24	m	9 39
24	f	7 31	ſ	3 58	m	1 15	tu	10 22
25	ſ	8 14	G	4 52	tu	2 18	w	11 7
26	A	8 55	m	5 46	w	3 22	th	11 52
27	m	9 37	tu	6 38	th	4 23	f	aftern.
28	tu	10 20	w	7 28	f	5 29	ſ	1 32
29	w	11 6	th	8 20	ſ	6 11	D	2 23
30	th	11 52	f	9 11	E	6 58	m	3 13

	D.	H.		D.	H.		D.	H.		D.	H.
New M.	1	1 M.	Full M.	4	6 A.	New M	7	7 N.	Firſt Q.	4	11 N.
Firſt Q.	8	10 M.	Laſt Q.	11	4 A.	Firſt Q.	15	12 N.	Full M.	12	11 M.
Full M.	15	3 M.	New M.	19	8 N.	Full M.	22	9 N.	Laſt Q.	19	4 M.
Laſt Q.	22	5 A.	Firſt Q.	27	1 A.	Laſt Q.	29	1 A.	New M.	26	2 A.
New M.	30	5 A.									

DECEMBER hath XXXI Days.

M. D.	Noted days and ſouthing of ſtars at midn.	1755 W.D.	1755 ☽'s ſou.	1756 W.D.	1756 ☽'s ſou.	1757 W.D.	1757 ☽'s ſou.
1	*Day 8 h. long*	m	morn.	w	aftern.	th	morn.
2		tu	11 10	th	9 18	f	5 1
3		w	aftern.	f	10 2	ſ	5 50
4	*Day dec. 8 h.* 31	th	1 3	ſ	10 45	B	6 37
5		f	2 0	C	11 31	m	7 23
6	*Goat*	ſ	2 57	m	morn.	tu	8 5
7	☉ecl. inv. 1760	E	3 55	tu	0 17	w	8 52
8	*Orion's left foot*	m	4 50	w	1 3	th	9 41
9		tu	5 39	th	1 52	f	10 31
10	*Bull's horn*	w	6 25	f	2 40	ſ	11 26
11		th	7 7	ſ	3 28	B	aftern.
12	*1ſt in Orien's belt*	f	7 54	C	4 14	m	1 21
13		ſ	8 35	m	5 2	tu	2 22
14	*Laſt in Orion's B.*	E	9 7	tu	5 47	w	3 23
15	*Day br. 6 h.*	m	9 53	w	6 33	th	4 25
16	*Orion's right*	tu	10 40	th	7 20	f	5 22
17	*(ſhoulder*	w	11 25	f	8 10	ſ	6 13
18		th	morn.	ſ	9 3	B	7 1
19	☉ecl. inv. 1759	f	0 5	C	9 59	m	7 49
20		ſ	0 50	m	11 0	tu	8 35
21	St. Thomas	E	1 43	tu	aftern.	w	9 19
22	Shorteſt day	m	2 37	w	1 3	th	10 6
23	☉ enters ♑	tu	3 25	th	2 3	f	10 54
24		w	4 16	f	3 2	ſ	11 42
25	Chriſt born	th	5 10	ſ	3 59	B	morn.
26	St. Stephen	f	6 0	C	4 50	m	0 29
27	St. John	ſ	6 52	m	5 37	tu	1 12
28	Innocents	E	7 44	tu	6 24	w	2 1
29	*Day inc. 5 m.*	m	8 37	w	7 7	th	2 51
30	☉ecl. inv. 1758	tu	9 33	th	7 50	f	3 37
31	*Syrius or Dog St.*	w	10 32	f	8 33	ſ	4 20
		 New M. Firſt Q. Full M. Laſt Q.	D. H. 3 1 A. 10 0 -- 18 5 A. 26 9 M.	 Full M. Laſt Q. New M. Firſt Q.	D. H. 6 5 A. 14 8 N. 21 3 A. 28 10 M.	 Laſt Q. New M. Firſt Q. Full M.	D. H. 3 9 N. 11 6 M. 17 12 N. 25 0 --

DECEMBER for ſeven Years.

M. D.	1758		1759		1760		1761	
	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.	W.D.	☽'s ſou.
1	f	aftern.	ſ	aftern.	m	morn.	tu	aftern.
2	ſ	1 41	G	10 56	tu	8 23	w	4 52
3	A	2 39	m	11 54	w	9 3	th	5 39
4	m	3 37	tu	morn.	th	9 44	f	6 21
5	tu	4 34	w	0 51	f	10 25	ſ	7 4
6	w	5 30	th	1 52	ſ	11 8	D	7 47
7	th	6 23	f	2 51	E	11 54	m	8 32
8	f	7 14	ſ	3 49	m	aftern.	tu	9 19
9	ſ	8 4	G	4 41	tu	1 32	w	10 10
10	A	8 53	m	5 39	w	2 23	th	11 5
11	m	9 43	tu	6 14	th	3 14	f	12 7
12	tu	10 34	w	6 56	f	4 5	ſ	morn.
13	w	11 27	th	7 36	ſ	4 53	D	1 11
14	th	morn.	f	8 16	E	5 41	m	2 26
15	f	0 20	ſ	8 57	m	6 27	tu	3 20
16	ſ	1 14	G	9 38	tu	7 13	w	4 19
17	A	2 7	m	10 20	w	8 1	th	5 12
18	m	2 59	tu	11 7	th	8 51	f	6 0
19	tu	3 47	w	11 57	f	9 45	ſ	6 45
20	w	4 33	th	aftern.	ſ	10 44	D	7 29
21	th	5 18	f	1 43	E	11 46	m	8 12
22	f	6 0	ſ	2 38	m	morn.	tu	8 55
23	ſ	6 40	G	3 32	tu	0 51	w	9 40
24	A	7 21	m	4 24	w	1 55	th	10 27
25	m	8 3	tu	5 12	th	2 56	f	11 16
26	tu	8 47	w	6 4	f	3 51	ſ	12 6
27	w	9 33	th	6 52	ſ	4 41	D	aftern.
28	th	10 22	f	7 42	E	5 27	m	1 47
29	f	11 18	ſ	8 33	m	6 9	tu	2 35
30	ſ	aftern.	G	9 26	tu	6 50	w	3 21
31	A	1 15	m	10 21	w	7 31	th	4 5

	D. H.		D. H		D. H.		D. H.
First Q.	7 7 N.	Full M.	4 5 M.	New M.	7 2 A.	First Q.	4 7 N.
Full M.	14 5 A.	Laſt Q.	11 10 M.	First Q.	15 2 A.	Full M.	11 11 N.
Laſt Q.	22 2 A.	New M.	19 2 A.	Full M.	22 7 M.	Laſt Q.	18 2 A.
New M.	30 7 M.	First Q.	26 12 N.	Laſt Q.	29 5 M.	New M.	26 9 M.

The foregoing Kalendar *explained.*

In the left-hand page.

1. The firſt column, noted M. D. ſignifies the days of the month for the firſt three years.

2. The ſecond column ſhews the ſouthing of ſome of the remarkable fixed ſtars, for finding the hour of the night, as alſo the length of days; increaſe or decreaſe of days; at what time day breaks; equation of time for regulating of clocks and watches, according to a good ſun-dial; likewiſe ſaints' days and fixed anniverſaries, all which are perpetual, or every year alike, therefore this column ſerves to all the ſeven years in both pages as well as if inſerted ſeven times.

3. In the top ſquares are inſerted the dates o each year of our Lord, and under every year ar two columns ſerving to it; as under the yea 1755, is the third column, noted W. D. ſignifying the day of the week in that year, and th fourth column, marked with ☽'s ſou. whic ſheweth the time of the moon's ſouthing in th ſame year of 1755, and ſo of the reſt; as in th fifth and ſixth columns for the year 1756, an in the ſeventh and eighth columns for the yea 1757.

In the right-hand page.

1. In the firſt column are month days, ſerving the laſt four years, noted M. D. in the ſecon column are week days, and, in the third colum moon's ſouthing for the year 1758; in the fourt and fifth columns for the year 1756, and in th

ſixt

ſixth and ſeventh columns for the year 1760; and in the eighth and ninth, or laſt columns, for the year 1761.

2. The week days in every year are exhibited by the letter or letters beginning their names; as m for monday, tu for tueſday, w for Wedneſday, th for Thurſday, f for Friday, ſ for Saturday, Sunday is known by the dominical letter.

3. The changes, fulls, and quarters of the moon in every month, is put under the reſpective year, to which they belong; where note, that the figures under the letter D ſignify the day of the month; and thoſe under the letter H, the hour of the day or night in which the lunation happens; M ſheweth morning, — noon, A afernoon, and N night: as for example, the moon s at her laſt quarter on Sunday the 5th day of January, at 1 o'clock in the afternoon, in the year 1755. Obſerve the ſame by the reſt.

To find the riſing and ſetting of the ſun, oberve the tables at the beginning of the kalendar *page* 92) where it is inſerted to every day through ut the year, and will ſerve to every year to the nd of the time.

To find the riſing and ſetting of the moon and er ſign in the body, conſult the following bles.

Thus have I ſhewn you how to underſtand is kalendar, which, altho' it is contained in the mpaſs of one, yet ſhews plainly every particur neceſſary to be known in country buſineſs, r ſeven years.

If from my works you ought can learn
I ſhall be ſatisfied.
I love my king and countrymen ;
To be of uſe's my pride.
Accept, dear ſirs, then in good part,
This as a pledge of love ;
To pleaſe you would rejoice my heart
And all my fears remove.

A TABLE *for finding the* riſing *and* ſetting *of the* Moon *by her age, according to mean motion, for ever.*

For the Moon's riſing				For the Moon's ſetting.		
At the Full, M. riſes at ſun-ſet				At Change M. ſets at ſun-ſet.		
Moon's age.		Hours	Min.	Moon's age.	Hours	Min.
Days after the Full.	The M's age, or days aft. Change.	Moon riſes after Sun-ſet.		Days after the change.	Moon ſets after the ſun.	
1	16	0	48	1	0	48
2	17	1	36	2	1	36
3	18	2	24	3	2	24
4	19	3	12	4	3	12
5	20	4	0	5	4	0
6	21	4	48	6	4	48
7	22	5	36	7	5	36
8	23	6	24	8	6	24
9	24	7	12	9	7	12
10	25	8	0	10	8	0
11	26	8	48	11	8	48
12	27	9	36	12	9	36
13	28	10	24	13	10	24
14	29	11	12	14	11	12

EXPLANATION.

Firſt, Find the moon's age in the kalendar by accounting how many days have elapſed ſince her change; or, if to find her riſing, to reckon the days after the full is better than the moon's age.

Secondly, With the moon's age for her ſetting, or days after the full, to find her riſing, enter this table, where at one view, you have the hour and minute of the moon's riſing or ſetting after ſunſet, which, added thereto, gives the time required.

EXAMPLE *for the 8th day of January in the year* 1757.

There was full moon on the 5*th day, therefore the* 8*th is* 3 *days after, with which enter the table for the moon's riſing, and againſt* 3 *days after the full, is* 2 *hours* 24 *minutes, the time the moon riſes after the ſun; then add* 2 *hours* 24 *minutes to* 3 *hours* 53 *minutes*, (*the time of ſun-ſetting that day*) *gives* 17 *minutes paſt* 6, *the time of riſing that night. This is ſo plain that it needs no more examples.*

Of the Moon's Signs.

By the Moon's Sign is meant, that part of the body of man or beaſt governed by that zodiacal conſtellation in which the moon is; which are as follow.

♈ *Aries*, the head and face
♉ *Taurus*, neck and throat
♊ *Gemini*, arms and ſhoulders
♋ *Cancer*, breaſt and ſtomach
♌ *Leo*, heart and back.
♍ *Virgo*, bowels and belly
♎ *Libra*, reins and loins.
♏ *Scorpio*, ſecret members
♐ *Sagittary*, hips and thighs
♑ *Capricorn*, knees and hams
♒ *Aquarius*, legs and ancles
♓ *Piſces*, feet and toes.

Some of the uſes men make of this, is in blood-letting, vomiting, purging, ſweating, taking of glyſters, ſtaying of fluxes, rheums, and laxes, but chiefly in cutting of cattle: their rules are theſe,

For Bleeding *by the* Lancet.

Hot cholerick perſons ſhould bleed when the moon is in the breaſts, ſecrets, or feet.

Dull flegmatick perſons muſt be let blood when the moon is in the head or thighs.

Cold melancholy perſons ſhould be let blood when the moon is in the reigns or legs.

Briſk ſanguine perſons ſhould bleed when the moon is in any ſign except the heart.

All ſorts of perſons are not to be let blood when the moon is in the part where your vein is opened.

For Vomiting.

Take a vomit when the moon is in a cold ſign, as in the neck, belly, and knees, but not in the breaſt, ſecrets, or feet, for then the vomits turn to a purge.

For

For Purging.

Obſerve to purge when the moon is in a watry ſign, as the breaſt, ſecrets, or feet.

For Bathing *or* Sweating.

Enter a bath, or ſweat at ſuch time as 'tis good for purging, when you are afflicted with hot diſeaſes.

Enter a bath, or ſweat for cold infirmities, when the moon is in hot ſigns, as the head, heart, and thighs.

For taking of Glyſters.

Take glyſters when the moon is in any airy ſign, as in the knees or ſecrets.

For ſtaying of Fluxes, Rheums, *and* Laxes.

To ſtay fluxes, rheums, and looſeneſs, let the moon be in the knees, neck, or bowels.

For cutting *of* Cattle.

See that the moon be not in the head, heart, or ſecrets, (eſpecially the ſecrets) and that ſhe is not in the ſouth, which may be found in the kalendar, for it is known by ſad experience, that the cattle then gelded, do, for the moſt part, die in the operation: therefore, for the good of all ſuch perſons who are maſters of cattle, I will here give the time when the moon is near the middle of the ſign Scorpio, or the ſecrets, through the preceding kalendar.

A TABLE *ſhewing the* Year, Month, *and* Day *of the* Month, *when the* Moon *is in the ſign* Scorpio *or the ſecrets for ſeven Years.*

Years of Chriſt.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1755	7	3	3 30	27	24	20	18	14	10	7	4	1 28
1756	25	21	20	16	13	10	7	3 31	27	24	21	18
1757	14	11	10	6	4 31	27	24	21	17	14	11	8
1758	5	1 28	28	24	21	18	15	11	8	5	1 29	26
1759	22	18	11	14	11	8	5	1 29	25	22	18	16
1760	12	8	7	3 30	28	24	21	18	14	11	8	5
1761	2 29	25	24	20	17	14	11	7	4	1 28	25	22

Explanation. Find the year in the left-hand column, and the month on the top, and in the angle, ſquare, or ſetting of the rows, is the day of the month when the moon is near the middle of the ſign.

Example *for the* Month *of* May, *in the Year* 1758.

I find 1758 *in the ſide, againſt which year, and in the column directly under is* 21, *the day of the month in which the moon is near the middle of Scorpio.*

Note. In ſome months where there are two numbers, one over the other, they ſignify the moon to be in Scorpio twice in that month, as in March, in the year 1755, on the 3d, and again on the 30th day.

For thoſe that would be ſafe, and ſure to have the moon out of the ſecrets, let them forbear cutting for three days, *viz.* on the day before, and the day after; the moon ſometimes being near as long in any ſign.

* * *

Of ECLIPSES.

IF any of my readers ſhould be ignorant of the cauſe of ſuch appearances, let them conſider,

1ſt. That the ſun is the giver of light to the moon and other planets, like as to the earth.

2d. That the moon is a thick dark body, like our globe, which is apparent from the duſky colour to be ſeen in that part oppoſite the ſun, ſome nights after her change.

Therefore an eclipſe of the ſun happens at ſuch time as the moon paſſeth under him, being in a direct line betwixt his radiant face and ſome part of our globe, which is always at a new moon, having little or no latitude.

The moon is eclipſed when ſhe enters the earth's ſhade (which at the moon's orb, is above twice the diameter of her body) which being in direct oppoſition to the ſun, ſhe muſt then ſuffer the loſs of the ſun's rays, until ſhe can get from behind the dark curtain of the earth; this happens at the full-moon, near the ecliptick.

The ſun is totally darkened but in few places at one time; the reaſons are, becauſe the moon is much leſs than the earth, and much nearer to us than the ſun, whereby when ſhe appears to cover his body at one place, ſhe appears intirely above, or below him in another; ſo that the ſame eclipſe may be ſeen total in one place, partial in another, and to other places not at all viſible, although it happens in the middle of the day.

The moon is ſeen eclipſed in the ſame manner, bigneſs, and duration, to every place where ſhe is above the horizon, becauſe there is no materal ſubſtance betwixt our ſight and her body, that can appear different in any two places; but the earth's ſhaddow (by which ſhe is eclipſed) cauſeth the ſame appearance to all terrene inhabitants, if they can but ſee the moon's face, which is the reaſon there are more viſible eclipſes of the moon in any one place, than of the ſun.

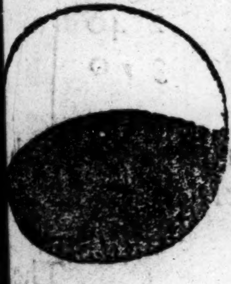
An ACCOUNT *of the* ECLIPSES *happening for ſeven Years.*

Of the Eclipſes *in the Year* 1755.

IN this year are four eclipſes, two of each light; the firſt is of the ſun, March the 12th, about 10 at night, inviſible.

The ſecond is of the Moon, viſible on March the 27th at midnight, as follows.

TYPE at Cirenceſter



	H	M.	
Beg. Mar. 27,	11	3	at night
Gr. darkn. 28,	0	14	in morn.
Ends	1	26	
Duration	2	23	
Digit. eclipſed 6	3	0	

The third eclipſe is of the ſun, September the 6th, at 8 in the morning, but inviſible to England.

The fourth, and laſt this year, is of the moon, on the 20th day of ſeptember, at 11 in the morning, conſequently inviſible to thoſe parts of the world.

Of Eclipſes *in the Year* 1756.

There are two eclipſes, both of the ſun, and inviſible, happening in the following order.

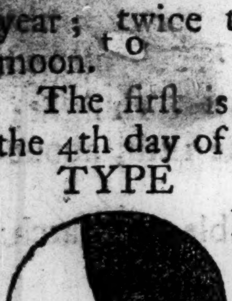
The firſt is on March 1ſt, at two in the morning. The ſecond is on Auguſt the 25th, at 7 in the evening.

Of Eclipſes *in the Year* 1757.

Four times are the luminaries eclipſed this year; twice the ſun, and as many times the moon.

The firſt is a viſible defect of the moon, on the 4th day of February in the moning.

TYPE



	H.	M.
Begins Feb. 4th,	5	30
Middle	6	50
End	8	10
Duration	2	40
Digit. eclipſed 6	3	0

The ſecond is of the ſun, February the 18th day at 1 in the afternoon, inviſible to thoſe on this ſide of the equinoctial.

The third eclipſe is of the moon, viſible according to the following calculation.

TYPE

	H.	M.	
Big. July 30th	10	14	at night
Middle	11	45	
End 31ſt day	1	16	Morn.
Duration	3	2	
Digits eclipſed	11	½.	

The fourth is of the ſun, on Auguſt the 14th, about 10 at night, therefore inviſible.

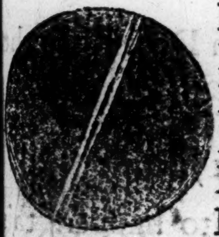
Of Eclipſes *in the Year* 1758.

Within the circuit of this year are ſix eclipſes, four of the ſun, and two of the moon, they happen as follow.

The firſt is a ſolar eclipſe, inviſible, on the 9th day of January, about 6 at night.

The ſecond is a very great and total eclipſe of the moon, viſible on the 24th of January in the morning.

TYPE



	H.	M.
Begin. Jan. 24th	4	16
Begin. of tot. darkn.	5	21
Middle	6	11
End of total darkn.	7	1
End of eclipſe	8	7
Dur. of total darkn.	1	40
Dur. of the eclipſe	3	51
Digits eclipſed 21		

The third is of the ſun, inviſible, February the 8th, at 4 in the morning.

The fourth is of the ſun, inviſible, July the 5th, at 9 in the morning.

The fifth is of the moon, inviſible, July the 20th, at 5 in the afternoon.

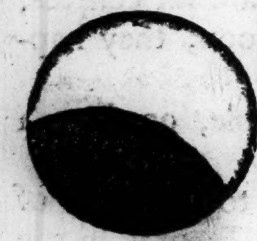
The 6th is of the ſun, inviſible, December the 30th, at 7 in the morning.

Of Eclipſes *for the Year* 1759.

In this year will be three eclipſes, two of the ſun, both inviſible, and one of the moon, viſible according to the following calculation.

The moon eclipſed January the 13th at 8 in the morn.

TYPE



	H.	M.
Begin. Jan. the 13th	6	32
Middle	7	51
End	9	9
Duration	2	37
Digits eclipſed 6		

Note. The moon ſets eclipſed as in the type.

The ſecond is of the ſun, June the 24th, at 6 in the afternoon.

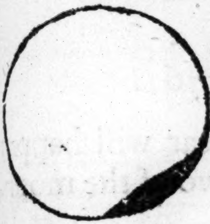
The third alſo is a ſolar eclipſe, on December the 19th, at 3 in the afternoon.

Of Eclipſes *in the Year* 1760.

There are four eclipſes expected to happen thi year, their times are as follow.

The firſt is a very ſmall defect of the moon viſible, as in the type, it happens on the 29th da

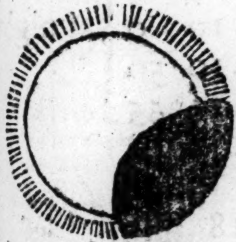
o



of May, 23 minutes paſt 9 at night, the duration is but ſmall; indeed it may be accounted no eclipſe.

The ſecond eclipſe is of the ſun, viſible to us in England on the 13th day of June; the middle is 22 minutes after 7 in the morning, duration near 2 hours, when one third part of the ſun's lower limb is darkened by the opaque body of the moon, ſee the figure.

TYPE

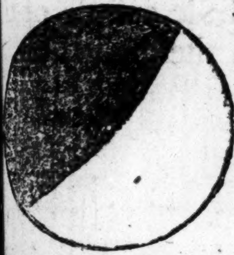


Digits eclipſed 5

Altho' this eclipſe is but ſmall to us, yet to the inhabitants of Arabia, it will be total at noon; it is very conſiderable in the Eaſt-Indies, and the ſouthern parts of Europe, as in Turky, Italy, France, and Spain.

The third eclipſe this year is of the moon, viſible, November the 22d about 9 at night, as follows.

TYPE



	H.	M.
Begins Nov. 22d	7	59
Middle	9	10
End	10	21
Duration	2	22
Digit eclipſed 6°		

The fourth and laſt is of the ſun, inviſible, December the 7th at 3 in the afternoon.

Of Eclipſes *in the Year* 1761.

Within the revolution of this year will happen ſix eclipſes, four of the ſun, and two of the moon, in the following Order.

The firſt is of the ſun, inviſible, May the 4th, at 6 in the afternoon.

The ſecond is a great and viſible eclipſe of the moon, on the 18th of May.

TYPE

	H.	M.	
Beg. of ecl.	8	5	at night
Beg. of tot. dark.	9	10	
Midd. of ecl.	10	0	
End of tot. dark.	10	50	
End of eclipſe	11	55	
Dur. of tot. dark.	1	40	
Duration of ecl.	3	50	
Digits eclipſed	18		

The third is of the ſun, inviſible, June the 3 about 1 in the morning.

The fourth is likewiſe of the ſun, inviſibl October the 27th about 10 at night.

The fifth is of the moon, inviſible, Novemb the 12th at 11 in the morning.

The ſixth, and laſt is an inviſible eclipſe of th ſun, November the 26th at 3 in the afternoon.

A TABLE *ſhewing the* Moon's Sign *for the year* 1755.

Jan.		Feb.		Mar.		Apr.		May.		June.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	heart	1	reigns	1	loins	1	hips	1	hams	1	feet
2	bowels	3	ſecrets	2	ſecrets	3	knees	2	legs	3	head
5	reins	5	hips	4	hips	5	legs	5	feet	6	neck
7	ſecrets	7	knees	6	knees	7	feet	7	head	8	arms
9	hips	10	legs	9	legs	10	head	10	neck	11	breaſt
11	knees	12	feet	11	feet	12	neck	12	arms	13	heart
13	legs	14	head	14	head	15	arms	15	breaſt	15	bowels
16	feet	17	neck	16	neck	17	breaſt	17	heart	18	reins
18	head	19	arms	19	arms	20	heart	19	bowels	20	ſecrets
21	neck	22	breaſt	21	breaſt	22	bowels	21	reins	22	hips
23	arms	24	heart	23	heart	24	reins	23	ſecrets	24	knees
25	breaſt	26	bowels	26	bowels	26	ſecrets	25	hips	26	legs
28	heart	28	reins	28	reins	28	hips	27	knees	28	feet
30	bowels			30	ſecrets	30	knees	30	legs	30	toes

July.		Aug.		Sept.		Oct.		Nov.		Dec.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	head	1	throat	1	breaſt	1	heart	1	reins	1	ſecrets
3	neck	2	arms	3	heart	3	bowels	3	ſecrets	3	hips
6	arms	5	breaſt	5	bowels	5	reins	5	hips	5	knees
8	breaſt	7	heart	7	reins	7	ſecrets	7	knees	7	legs
10	heart	9	bowels	10	ſecrets	9	hips	9	legs	9	feet
13	bowels	11	reins	12	hips	11	knees	12	feet	12	head
15	reins	13	ſecrets	14	knees	13	legs	14	head	14	neck
17	ſecrets	15	hips	16	legs	16	feet	17	neck	17	arms
19	hips	18	knees	18	feet	18	head	19	arms	19	breaſt
21	knees	20	legs	21	head	21	neck	12	breaſt	21	heart
23	legs	22	feet	23	neck	23	arms	24	heart	24	bowels
26	feet	24	head	26	arms	26	breaſt	27	bowels	26	reins
28	head	27	neck	28	breaſt	28	heart	29	reins	28	ſecrets
31	neck	30	arms	30	ſtom.	30	bowels	30	loins	30	hips

A TABLE *ſhewing the* Moon's Sign *for the year* 1756.

Jan.		Feb.		Mar.		Apr.		May		June.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	knees	1	ancles	1	toes	1	neck	1	arms	1	ſtom.
3	legs	2	feet	3	head	4	arms	4	breaſt	2	heart
5	feet	4	head	5	neck	6	breaſt	6	heart	5	bowels
8	head	7	neck	7	arms	9	heart	9	bowels	7	reins
10	neck	9	arms	10	breaſt	11	bowels	11	reins	9	ſecrets
13	arms	12	breaſt	12	heart	13	reins	13	ſecrets	11	hips
15	breaſt	14	heart	15	bowels	15	ſecrets	15	hips	13	knees
18	heart	16	bowels	17	reins	17	hips	17	knees	15	legs
20	bowels	19	reins	19	ſecrets	19	knees	19	legs	17	feet
22	reins	21	ſecrets	21	hips	22	legs	21	feet	20	head
24	ſecrets	23	hips	23	knees	24	feet	23	head	22	neck
27	hips	25	knees	25	legs	26	head	26	neck	25	arms
29	knees	27	legs	28	feet	29	neck	28	arms	27	breaſt
31	legs	29	feet	30	head	30	throat	31	breaſt	30	heart

July.		Aug.		Sept.		Oct.		Nov.		Dec.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	back	1	reins	1	hips	1	knees	1	feet	1	head
2	bowels	3	ſecrets	3	knees	3	legs	3	head	3	neck
4	reins	5	hips	5	legs	5	feet	6	neck	6	arms
7	ſecrets	7	knees	8	feet	7	head	8	arms	8	breaſt
9	hips	9	legs	10	head	10	neck	11	breaſt	11	heart
11	knees	11	feet	12	neck	12	arms	13	heart	13	bowels
13	legs	13	head	15	arms	14	breaſt	16	bowels	15	reins
15	feet	16	neck	17	breaſt	17	heart	18	reins	18	ſecrets
17	head	18	arms	20	heart	19	bowels	20	ſecrets	20	hips
19	neck	21	breaſt	22	bowels	22	reins	22	hips	22	knees
22	arms	23	heart	24	reins	24	ſecrets	24	knees	24	legs
24	breaſt	26	bowels	26	ſecrets	26	hips	26	legs	26	feet
27	heart	28	reins	28	hips	28	knees	28	feet	28	head
29	bowels	30	ſecrets	30	thighs	30	legs	30	toes	30	neck

A TABLE *ſhewing the* Moon's Sign *for the year* 1757.

Jan.		Feb.		Mar.		Apr.		May.		June.	
Days	Signs	Days	Signs	Days	Signs	Days	Signs	Days	Signs	Days	Signs
1	throat	1	breaſt	1	ſtom.	1	bowels	1	reins	1	memb.
2	arms	3	heart	2	heart	4	reins	3	ſecrets	2	hips
4	breaſt	5	bowels	5	bowels	6	ſecrets	5	hips	4	knees
7	heart	8	reins	7	reins	8	hips	7	knees	6	legs
9	bowels	10	ſecrets	9	ſecrets	10	knees	9	legs	8	feet
12	reins	12	hips	12	hips	12	legs	12	feet	10	head
14	ſecrets	14	knees	14	knees	14	feet	14	head	12	neck
16	hips	17	legs	16	legs	16	head	16	neck	15	arms
18	knees	19	feet	18	feet	19	neck	18	arms	17	breaſt
20	legs	21	head	20	head	21	arms	21	breaſt	20	heart
22	feet	23	neck	22	neck	24	breaſt	23	heart	22	bowels
24	head	25	arms	25	arms	26	heart	29	bowels	25	reins
27	neck	28	breaſt	27	breaſt	29	bowels	28	reins	27	ſecrets
29	arms			30	heart	30	belly	31	ſecrets	29	hips

July.		Aug.		Sept.		Oct.		Nov.		Dec.	
Days	Signs	Days	Signs	Days	Signs	Days	Signs	Days	Signs	Days	Signs
1	knees	1	feet	1	face	1	throat	1	breaſt	1	back
3	legs	4	head	2	neck	2	arms	3	heart	3	bowels
5	feet	6	neck	4	arms	4	breaſt	6	bowels	5	reins
7	head	8	arms	7	breaſt	7	heart	8	reins	8	ſecrets
9	neck	11	breaſt	9	heart	9	bowels	10	ſecrets	10	hips
12	arms	13	heart	12	bowels	12	reins	13	hips	12	knees
14	breaſt	16	bowels	14	reins	14	ſecrets	15	knees	14	legs
17	heart	18	reins	17	ſecrets	16	hips	17	legs	16	feet
19	bowels	21	ſecrets	19	hips	18	knees	19	feet	18	head
22	reins	23	hips	21	knees	21	legs	21	head	21	neck
24	ſecrets	25	knees	23	legs	23	feet	23	neck	23	arms
26	hips	27	legs	25	feet	25	head	26	arms	25	breaſt
28	knees	29	feet	27	head	27	neck	28	breaſt	28	heart
30	legs	31	head	30	neck	29	arms	30	heart	30	bowels

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A TABLE ſhewing the Moon's Sign for the year 1758.

Jan.		Feb.		Mar.		Apr.		May.		June.	
Days	Signs	Days	Signs	Days	Signs	Days	Signs	Days	Signs	Days	Signs
1	belly	1	ſecrets	1	memb.	1	knees	1	ancles	1	face
2	reins	3	hips	2	hips	3	legs	2	feet	3	neck
4	ſecrets	5	knees	4	knees	5	feet	4	head	5	arms
6	hips	7	legs	6	legs	7	head	6	neck	7	breaſt
8	knees	9	feet	8	feet	9	neck	8	arms	9	heart
10	legs	11	head	10	head	11	arms	11	breaſt	12	bowels
12	feet	13	neck	12	neck	13	breaſt	13	heart	14	reins
15	head	15	arms	15	arms	16	heart	16	bowels	17	ſecrets
17	neck	18	breaſt	17	breaſt	18	bowels	18	reins	19	hips
19	arms	20	heart	19	heart	21	reins	21	ſecrets	21	knees
21	breaſt	23	bowels	22	bowels	23	ſecrets	23	hips	23	legs
24	heart	25	reins	24	reins	26	hips	25	knees	26	feet
26	bowels	28	ſecrets	27	ſecrets	28	knees	27	legs	28	head
29	reins			29	hips	30	legs	29	feet	30	neck

July.		Aug.		Sept.		Oct.		Nov.		Dec.	
Days	Signs	Days	Signs	Days	Signs	Days	Signs	Days	Signs	Days	Signs
1	throat	1	breaſt	1	back	1	belly	1	ſecrets	1	thighs
2	arms	3	heart	2	bowels	2	reins	3	hips	2	knees
4	breaſt	6	bowels	4	reins	4	ſecrets	5	knees	4	legs
7	heart	8	reins	7	ſecrets	7	hips	7	legs	7	feet
9	bowels	11	ſecrets	9	hips	9	knees	9	feet	9	head
12	reins	13	hips	12	knees	11	legs	12	head	11	neck
14	ſecrets	15	knees	14	legs	13	feet	14	neck	13	arms
17	hips	17	legs	16	feet	15	head	16	arms	15	breaſt
19	knees	19	feet	18	head	17	neck	18	breaſt	18	heart
21	legs	21	head	20	neck	19	arms	20	heart	20	bowels
23	feet	23	neck	22	arms	21	breaſt	23	bowels	23	reins
25	head	26	arms	24	breaſt	24	heart	25	reins	25	ſecrets
27	neck	28	breaſt	27	heart	26	bowels	28	ſecrets	27	hips
29	arms	30	heart	29	bowels	29	reins	30	hips	30	knees

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A TABLE *ſhewing the* Moon's Sign *for the year* 1759.

Jan.		Feb.		Mar.		Apr.		May.		June.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	legs	1	head	1	head	1	arms	1	breaſt	1	back
3	feet	3	neck	3	neck	3	breaſt	3	heart	2	bowels
5	head	6	arms	5	arms	6	heart	5	bowels	4	reins
7	neck	8	breaſt	7	breaſt	8	bowels	8	reins	7	ſecrets
9	arms	10	heart	10	heart	11	reins	10	ſecrets	9	hips
12	breaſt	13	bowels	12	bowels	13	ſecrets	13	hips	12	knees
14	heart	15	reins	15	reins	16	hips	15	knees	14	legs
16	bowels	18	ſecrets	17	ſecrets	18	knees	18	legs	16	feet
19	reins	20	hips	20	hips	20	legs	20	feet	18	head
21	ſecrets	23	knees	22	knees	23	feet	22	head	20	neck
24	hips	25	legs	24	legs	25	head	24	neck	22	arms
26	knees	27	feet	26	feet	27	neck	26	arms	25	breaſt
28	legs	28	toes	28	head	29	arms	28	breaſt	27	heart
30	feet			30	neck	30	ſhoul.	30	heart	29	bowels

July.		Aug.		Sept.		Oct.		Nov.		Dec.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	belly	1	ſecrets	1	thighs	1	legs	1	toes	1	neck
2	reins	3	hips	2	knees	4	feet	2	head	3	arms
4	ſecrets	5	knees	4	legs	6	head	4	neck	5	breaſt
7	hips	8	legs	6	feet	8	neck	6	arms	8	heart
9	knees	10	feet	8	head	10	arms	8	breaſt	10	bowels
11	legs	12	head	10	neck	12	breaſt	10	heart	12	reins
13	feet	14	neck	12	arms	14	heart	13	bowels	15	ſecrets
16	head	16	arms	14	breaſt	16	bowels	15	reins	17	hips
18	neck	18	breaſt	17	heart	19	reins	18	ſecrets	20	knees
20	arms	20	heart	19	bowels	21	ſecrets	20	hips	22	legs
22	breaſt	23	bowels	22	reins	24	hips	23	knees	24	feet
24	heart	25	reins	24	ſecrets	26	knees	25	legs	27	head
27	bowels	28	ſecrets	27	hips	29	legs	27	feet	29	neck
29	reins	30	hips	29	knees	31	feet	29	head	31	arms

A TABLE *ſhewing the* Moon's Sign *for the year* 1760.

Jan.		Feb.		Mar.		Apr.		May		June.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	ſhoul.	1	back	1	bowels	1	loins	1	memb.	1	knees
2	breaſt	3	bowels	3	reins	2	ſecrets	2	hips	3	legs
4	heart	5	reins	6	ſecrets	5	hips	4	knees	5	feet
6	bowels	7	ſecrets	8	hips	7	knees	7	legs	8	head
9	reins	10	hips	11	knees	10	legs	9	feet	10	neck
11	ſecrets	12	knees	13	legs	12	feet	11	head	12	arms
14	hips	15	legs	15	feet	14	head	13	neck	14	breaſt
16	knees	17	feet	18	head	16	neck	15	arms	16	heart
18	legs	19	head	20	neck	18	arms	17	breaſt	18	bowels
21	feet	21	neck	22	arms	20	breaſt	19	heart	20	reins
23	head	23	arms	24	breaſt	22	heart	22	bowels	23	ſecrets
25	neck	25	breaſt	26	heart	24	bowels	24	reins	25	hips
27	arms	28	heart	38	bowels	27	reins	27	ſecrets	28	knees
29	breaſt	29	back	31	reins	29	ſecrets	29	hips	30	legs

July.		Aug.		Sept.		Oct.		Nov.		Dec.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	ancles	1	head	1	throat	1	breaſt	1	back	1	reins
3	feet	3	neck	2	arms	3	heart	2	bowels	4	ſecrets
5	head	6	arms	4	breaſt	5	bowels	4	reins	6	hips
7	neck	8	breaſt	6	heart	8	reins	7	ſecrets	9	knees
9	arms	10	heart	8	bowels	10	ſecrets	9	hips	11	legs
11	breaſt	12	bowels	10	reins	13	hips	12	knees	14	feet
13	heart	14	reins	13	ſecrets	15	knees	14	legs	16	head
15	bowels	17	ſecrets	15	hips	18	legs	16	feet	18	neck
18	reins	19	hips	18	knees	20	feet	19	head	20	arms
20	ſecrets	22	knees	20	legs	22	head	21	neck	22	breaſt
23	hips	24	legs	23	feet	24	neck	23	arms	24	heart
25	knees	26	feet	25	head	26	arms	25	breaſt	26	bowels
28	legs	28	head	27	neck	28	breaſt	27	heart	29	reins
30	feet	31	neck	29	arms	31	heart	29	bowels	31	ſecrets

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A TABLE *ſhewing the* Moon's Sign *for the year* 1761.

Jan.		Feb.		Mar.		Apr.		May.		June.	
Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.	Days	Signs.
1	memb.	1	knees	1	knees	1	ancles	1	toes	1	throat
3	hips	4	legs	3	legs	2	feet	2	head	2	arms
5	knees	6	feet	6	feet	4	head	4	neck	4	breaſt
8	legs	9	head	8	head	6	neck	6	arms	6	heart
10	feet	11	neck	10	neck	8	arms	8	breaſt	8	bowels
12	head	13	arms	12	arms	11	breaſt	10	heart	11	reins
15	neck	15	breaſt	14	breaſt	13	heart	12	bowels	13	ſecrets
17	arms	17	heart	16	heart	15	bowels	14	reins	15	hips
19	breaſt	19	bowels	19	bowels	17	reins	17	ſecrets	18	knees
21	heart	21	reins	21	reins	19	ſecrets	19	hips	20	legs
23	bowels	24	ſecrets	23	ſecrets	22	hips	22	knees	23	feet
25	reins	26	hips	26	hips	24	knees	24	legs	25	head
27	ſecrets	28	thighs	28	knees	27	legs	27	feet	28	neck
30	hips			31	legs	29	feet	29	head	30	arms

July.		Aug.		Sept.		Oct.		Nov.		Dec.	
Days	Signs.	Days	Signs.	Days	Signs	Days	Signs.	Days	Signs.	Days	Signs.
1	ſhoul.	1	back	1	reins	1	memb	1	knees	1	legs
2	breaſt	2	bowels	3	ſecrets	3	hips	4	legs	4	feet
4	heart	4	reins	5	hips	5	knees	6	feet	6	head
6	bowels	6	ſecrets	8	knees	8	legs	9	head	9	neck
8	reins	9	hips	10	legs	10	feet	11	neck	11	arms
10	ſecrets	11	knees	13	feet	12	head	13	arms	13	breaſt
13	hips	14	legs	15	head	15	neck	15	breaſt	15	heart
15	knees	16	feet	17	neck	17	arms	17	heart	17	bowels
18	legs	19	head	20	arms	19	breaſt	19	bowels	19	reins
20	feet	21	neck	22	breaſt	21	heart	22	reins	21	ſecrets
23	head	23	arms	24	heart	23	bowels	24	ſecrets	24	hips
25	neck	25	breaſt	26	bowels	25	reins	26	hips	26	knees
27	arms	27	heart	28	reins	28	ſecrets	29	knees	29	legs
29	breaſt	30	bowels	30	ſecrets	30	hips	30	hams	31	feet

DIREC-

DIRECTIONS *for calculating the* Moon's Signs, *and Times of* Lunations *and* Southing.

IN the *period* of 6574 days, 19 hours, 43 min. or 18 years, 11 days, 7 hours, 43 min. the moon performs her ſeveral inequalities, both in longitude and latitude, ſo as to begin nearly in the ſame order as before; the middle motion of longitude in this period, is 10 deg. 48 min. which cannot fail of the true motion above 17 min. in her eccentrick equation, when in Apogeon, or Perigeon, making her true motion more than 10° 48′ in the former, but leſs in the latter: as for the other equations, found by her diſtance from the ſun, they make but little alteration.

Note. If the period contains five leap years inſtead of eleven, number ten days therein; alſo add 11 days more till October 1770, on account of the alteration of the ſtile.

To find the Moon's Place *in the* Zodiack, *to the noon of any day, commonly called her* Sign.

RULE. *To compute from noon to noon, (which is leſs than the full period by 7 hours 43 minutes) in an ephemeries for the foregoing period, find her true place, and by proportioning her daily motion, find her motion in the ſaid 7 hours 43 minutes, which ſubſtracted from 10° 48′ will give you a number to be added to her true place before found, for her place in the* Zodiack *at that time, which may err 17′ at ſome times, as before ſhewn; but for more ſpeed and exactneſs, uſe the following table:*

A TA

A TABLE *for calculating the* Moon's true Place.

Daily Motion.		Add		Daily Motion.		Add		Days from Apog. or Per.	
°	'	°	'	°	'	°	'	°	'
11	0	7	16	13	15	6	32	0	16
11	15	7	11	13	30	6	27	1	15
11	30	7	6	13	45	6	22	2	14
11	45	7	1	14	0	6	18	3	12
12	0	6	56	14	15	6	13	4	10
12	15	6	51	14	30	6	8	5	7
12	30	6	46	14	45	6	3	6	4
12	45	6	41	15	0	5	59	7	0
13	0	6	37	15	15	5	54		

USE *of the foregoing Table.*

Find the moon's true place, daily motion, and diſtance from her Apogeon, or Perigeon, in an ephemeries for the foregoing period, then

1ſt, With the moon's daily motion enter the table, againſt which is a number to be added to the place given.

2d, With the moon's diſtance from Apogeon, or Perigeon, re-enter the table, and the numbers there found added (when neareſt her Apogeon) to, or ſubſtracted (when neareſt her Perigeon) from the ſign before found, will give you the moon's true place in the Zodiack.

EXAMPLE. *What was the moon's true place the 27th of April* 1754 *at noon, the period having* 11 *days, &c.?*

From the year 1754, April the 27th,
Subſtract - 18 years and 22 days, 11
Remain —— (being added for N. Stile.
1736, April the 5th, the ☽'s place ♊ } 28° 28′
Her daily motion 13° 37′ give from the table } 6 25

69 4 50
☽ diſt. from Perig. 5 days. Subſt. 7

The moon's true place, April the 5th, 1754, in - - - - } 69 4 46

To find the Lunations.

Rule. *Find their times in the foregoing period, to which, according to the day of the month, by th table, in page* 75, *find a number that added to th time given, will give you the time required.*

Note. This will hold good when the moon i in 3 or 9 ſigns Anomaly, but removed from theſe will vary a few minutes.

Example. *By the full moon, December th 7th,* 1736, *at* 30 *min. paſt* 4 *in the morning, t find the time of the full in December,* 1754.

To 1736 Dec. 6th, 16 h. 30 m.
For Dec. 7th, add 18 y. 22 d. 8 h. 30 m.
Full moon in 1754 Dec. 29th, at 1 h. in th afternoon.

The eclipſes of both ſun and moon happen i the ſame order for number, and thoſe of th moon nearly the ſame quantity after every period

T

To find the Moon's Southing.

RULE. *To the equal time of her ſouthing in the foregoing period, ſubſtract* 17 *minutes will give the time ſought.*

EXAMPLE. *What time is the moon ſouth, November the* 23*d*, 1754*?*

Nov. 2d, 1736, ☽ ſouth 8 h. 38 m. at night.
Add 18 years 22 days and ſubſt. 17 min.
Give Nov. 24th, 1754, ☽ ſouth 8 h. 21 m. at night.

Thus may you eaſily compute the lunar appearances by theſe rules, which will be exact enough for any countryman's uſe.

A TABLE *of the Riſing, Southing, and Setting, of the* Pleiades, *or* Seven Stars, *for every 5th Day in the Year, of excellent Uſe to find the Hour of the Night.*

Months & Days		Rise		South.		Sets		Months & Days		Rise		South.		Sets	
		H.	M.	H.	M.	H.	M.			H.	M.	H.	M.	H.	M.
January	1	0M	28	8A	45	5M	2	July	1	12A	30	8M	47	5A	4
	6	0	6	8	23	4	40		6	12	10	8	27	4	44
	12	11	39	7	56	4	13		12	11	49	8	6	4	23
	17	11	17	7	34	3	51		17	11	29	7	46	4	3
	22	10	56	7	13	3	30		22	11	9	7	26	3	43
	27	10	35	6	52	3	9		27	10	49	7	6	3	23
February	1	10	15	6	32	2	49	Auguſt	1	10	30	6	47	3	4
	6	9	55	6	12	2	29		6	10	10	6	27	2	44
	12	9	31	5	48	2	5		12	9	48	6	5	2	21
	17	9	12	5	29	1	46		17	9	29	5	46	2	2
	22	8	52	5	9	1	26		22	9	10	5	27	1	44
	27	8	34	4	51	1	8		27	8	52	5	9	1	26
March	1	8	15	4	32	12A	49	September	1	8	34	4	51	1	8
	6	7	56	4	14	12	30		6	8	16	4	33	0	50
	12	7	45	4	2	12	19		12	7	54	4	11	0	28
	17	7	27	3	54	12	1		17	7	36	3	53	0	10
	22	7	7	3	24	11	41		22	7	18	3	35	11M	52
	27	6	49	3	6	11	23		27	6	58	3	16	11	33
April	1	6	31	2	48	11	5	October	1	6	40	2	57	11	14
	6	6	13	2	30	10	47		6	6	22	2	39	10	56
	12	5	51	2	8	10	25		12	6	4	2	21	10	31
	17	5	33	1	50	10	7		17	5	45	2	2	10	19
	22	5	14	1	31	9	48		22	5	26	1	43	10	0
	27	4	55	1	12	9	29		27	5	7	1	24	9	41
May	1	4	37	0	54	9	11	November	1	4	48	1	5	9	22
	6	4	17	0	34	8	51		6	4	28	0	44	9	2
	12	3	58	0	15	8	32		12	4	4	0	21	8	38
	17	3	38	11M	55	8	12		17	3	43	0A	0	8	17
	22	3	18	11	35	7	52		22	3	23	11	40	7	57
	27	2	58	11	15	7	32		27	3	1	11	18	7	35
June	1	2	38	10	55	7	12	December	1	2	40	10	57	7	14
	6	2	18	10	35	6	52		6	2	18	10	35	6	52
	12	1	54	10	11	6	28		12	1	56	10	13	6	30
	17	1	32	9	49	6	6		17	1	34	9	51	6	8
	22	1	12	9	29	5	46		22	1	12	9	29	5	46
	27	12A	51	9	8	5	25		27	0M	50	9	7	5	24

A TABLE *of* Tides *for the following Places.*

	H.	M.
Portſmouth, Southampton, Queenborough, Iſle of Wight - - -	0	0
Rocheſter, Malden, Aberdeen, Fluſhing	0	45
Graveſend, Downs, Ramkins, Rumney, Tennet - - - - - - - - -	1	30
St. Andrew's, Bell-iſle, Dundee, Holy-iſle	2	15
London, Tinmouth, Hartlepool, Whitby, Amſterdam - - - - - - - -	3	0
Berwick, Oſtend, Staples - - - - - -	3	45
Firth, Dunbar, Scarborough - - - - -	4	30
Newcaſtle, Humber, Falmouth, Dartmouth, Severn, Torbay - - - -	5	15
Plymouth, Weymouth, Lynn, Hull, Antwerp - - - - - - - - - -	6	0
Briſtol Key, Start Point, Foulneſs - -	6	45
Bridgwater, Milford, Land's End - -	7	30
Yarmouth, Hague, Portland, Dublin -	8	15
Pool, Iſle of Man, Orkney - - - - -	9	0
Dover, Yarmouth Road, Harwich, Calais Road - - - - - - - - - -	10	30
Rye, Solebay, Winchelſea - - - - -	10	15

Use *of this Table.*

To find the time of high-water at any of the above-named places, add the hours and minutes for the place to the ſouthing of the moon, the ſum will ſhew the time thereof.

EXAMPLE. *What is the time of high-water at Briſtol Key on the 1ſt of January* 1757?

The moon ſouths at 9 h. 17 m. afternoon.
To which add 6 45
High-water at 4 2 morn.

DIRECTIONS *for finding the* Beginning *and* Ending *of the four* LAW TERMS *in any year, with their* Returns.

I. *Of* Hilary Term.

Hilary Term always beginneth the 23d of January, (except it be Sunday, then the 24th) and endeth the 12th of February, and has ſour returns, *viz.* 1ſt, in 8 days of St. Hilary incluſive, Jan. 20. 2d, In 15 days, ditto, Jan. 27. 3d, On the morrow of the Purification of the Bleſſed Virgin, Feb. 3. 4th, In 8 days ditto, Feb. 9.

II. *Of* Eaſter Term.

Eaſter Term begins the Wedneſday fortnight after Eaſter Sunday, and ends the Monday after Aſcenſion-day, or Holy Thurſday: It hath five returns, *viz.* 1ſt, In a fortnight from Eaſter-day. 2d, In 3 weeks. 3d, In a month. 4th, In 5 weeks. 5th, On the morrow of Aſcenſion-day. For any of theſe moveable days, ſee p. 27.

III. *Of* Trinity Term.

This Term begins the Friday after Trinity Sunday, and ends the Wedneſday fortnight after: It hath four returns, *viz.* 1ſt, On the morrow of Trinity Sunday. 2d, In a week ditto. 3d, In a fortnight. 4th, In 3 weeks.

IV. *Of* Michaelmas Term.

Michaelmas Term begins November the 6th, (except Sunday) and ends November the 28th, and has four returns, *viz.* 1ſt, On the morrow of All-Souls, Nov, 3. 2d, On the morrow of St. Martin, Nov. 12. 3d, In 8 days of St. Martin, Nov. 18. 4th, In 15 days of St. Martin, Nov. 25.

Note. There are no Sittings in Weſtminſter-hall on Aſcenſion-day and the 2d of February.

The Exchequer opens 8 days before any Term begins, except Trinity, before which it opens but 4.

The firſt and laſt days of every Term are the firſt and laſt days of appearance.

* * *

A TABLE *of* Simple Intereſt, *at* 5 per Cent. *from* one *to a* thouſand Pounds.

		1 Month			3 Months			6 Months			9 Months			A Year.		
		l.	s.	d.	l.	s.	d.	l.	s.	d.	l.	s.	d.	l.	s.	d.
Pounds.	1	0	0	1	0	0	3	0	0	6	0	0	9	0	1	0
	2	0	0	2	0	0	6	0	1	0	0	1	6	0	2	0
	3	0	0	3	0	0	9	0	1	6	0	2	3	0	3	0
	4	0	0	4	0	1	0	0	2	0	0	3	0	0	4	0
	5	0	0	5	0	1	3	0	2	6	0	3	9	0	5	0
	6	0	0	6	0	1	6	0	3	0	0	4	0	0	6	0
	7	0	0	7	0	1	9	0	3	6	0	5	3	0	7	0
	8	0	0	8	0	2	0	0	4	0	0	6	0	0	8	0
	9	0	0	9	0	2	3	0	4	6	0	6	9	0	9	0
Tens of Pounds.	10	0	0	10	0	2	6	0	5	0	0	7	6	0	10	0
	20	0	1	8	0	5	0	0	10	0	0	15	0	1	0	0
	30	0	2	6	0	7	6	0	15	0	1	2	6	1	10	0
	40	0	3	4	0	10	0	1	0	0	1	10	0	2	0	0
	50	0	4	2	0	13	6	1	5	0	1	17	6	2	10	0
	60	0	5	0	0	15	0	1	10	0	2	5	0	3	0	0
	70	0	5	10	0	17	6	1	15	0	2	12	6	3	10	0
	80	0	6	8	1	0	0	2	0	0	3	0	0	4	0	0
	90	0	7	6	1	2	6	2	5	0	3	7	6	4	10	0
Hundreds of Pounds.	100	0	8	4	1	5	0	2	10	0	3	15	0	5	0	0
	200	0	16	8	2	10	0	5	0	0	7	10	0	10	0	0
	300	1	5	0	3	15	0	7	10	0	11	5	0	15	0	0
	400	1	13	4	5	0	0	10	0	0	15	0	0	20	0	0
	500	2	1	8	6	5	0	12	10	0	18	15	0	25	0	0
	600	2	10	0	7	10	0	15	0	0	22	10	0	30	0	0
	700	2	18	4	8	15	0	17	10	0	26	5	0	35	0	0
	800	3	6	8	10	0	0	20	0	0	30	0	0	40	0	0
	900	3	15	0	11	5	0	22	10	0	33	15	0	45	0	0
	1000	4	3	4	12	10	0	25	0	0	37	10	0	50	0	0

Find your principal in the firſt column, and in the common angle is the intereſt due for 1, 3, 6, 9, or 12 months.

A TA-

A TABLE *for buying and ſelling of any Commodity by the Great Hundred, which is* 112 *Pounds.*

d.	q.	l.	s.	d.	d.	q.	l.	s.	d.	d.	q.	l.	s.	d.	d.	q.	l.	s.	d.
	1	0	2	4		1	2	18	4		1	5	14	4		1	8	10	4
	2	0	4	8		2	3	0	8		2	5	16	8		2	8	12	8
	3	0	7	0		3	3	3	0		3	5	19	0		3	8	15	0
1	0	0	9	4	7	0	3	5	4	13	0	6	1	4	19	0	8	17	4
	1	0	11	8		1	3	7	8		1	6	3	8		1	8	19	8
	2	0	14	0		2	3	10	0		2	6	6	0		2	9	2	0
	3	0	16	4		3	3	12	4		3	6	8	4		3	9	4	4
2	0	0	18	8	8	0	3	14	8	14	0	6	10	8	20	0	9	6	8
	1	1	1	0		1	3	17	0		1	6	13	0		1	9	9	0
	2	1	3	4		2	3	19	4		2	6	15	4		2	9	11	4
	3	1	5	8		3	4	1	8		3	6	17	8		3	9	13	8
3	0	1	8	0	9	0	4	4	0	15	0	7	0	0	21	0	9	16	0
	1	1	10	4		1	4	6	4		1	7	2	4		1	9	18	4
	2	1	12	8		2	4	8	8		2	7	4	8		2	10	0	8
	3	1	15	0		3	4	11	0		3	7	7	0		3	10	3	0
4	0	1	17	4	10	0	4	13	4	16	0	7	9	4	22	0	10	5	4
	1	1	19	8		1	4	15	8		1	7	11	8		1	10	7	8
	2	2	2	0		2	4	18	0		2	7	14	0		2	10	10	0
	3	2	4	4		3	5	0	4		3	7	16	4		3	10	12	4
5	0	2	6	8	11	0	5	2	8	17	0	7	18	8	23	0	10	14	8
	1	2	9	0		1	5	5	0		1	8	1	0		1	10	17	0
	2	2	11	4		2	5	7	4		2	8	3	4		2	10	19	4
	3	2	13	8		3	5	9	8		3	8	5	8		3	11	1	8
6	0	2	16	0	12	0	5	12	0	18	0	8	8	0	24	0	11	4	0

USE *of this Table.*

This Table is of uſe in buying or ſelling of cheeſe, ſugars, tobacco, *&c.*

EXAMPLE I. *If a hundred of cheeſe be ſold for* 1*l.* 1*s. what is that per pound?*

I look 1l. 1s. in the ſecond column, againſt which, in the firſt, I find two-pence farthing the anſwer.

EXAMPLE II. *If cheeſe be bought for 3 pence per pound, what is that per hundred?*

I look 3 d. in the firſt column, againſt which in the ſecond is 1 l. 8 s. the anſwer.

Note. For every farthing that one pound coſts, reckon 2 s. 4 d. and that is the price of the great hundred.

* * *

NATURAL PROGNOSTICKS *for the Judgment of* WEATHER *and* GARDENING *in each Month.*

JANUARY.

WHen clouds, like woolly fleeces, mount the ſky
With hollow winds, ſhew hail or ſnow is nigh;
Hail-ſtorms expect when Borean's rough winds blow;
If ſofter ſouthern gales, then judge a ſnow:
When miſty circles round the moon appear,
They ſhew groſs vapours in our atmoſphere,
Which ſoon in foggy-rimes or rain deſcend.
If Luna's horn's look clear, they froſt protend.

In this month ſet quick-ſets and fruit-trees, if the wind be ſouth or weſt, and be ſure you place the ſame ſide towards the north that grew ſo at firſt; you may prune ſtandard trees, vines, and ſtocks for grafting.

Set early beans and peas; prepare a mixture of dung and earth to rot for layering your flowers.

FEBRU-

FEBRUARY.

If the ſun ſets enlarg'd with livid blue,
He bodes wet weather by his watry hue;
If circles round him dark and thick appear,
Or round the moon, both rain and ſnow declare.

Now plant roſe-trees, vines, and all ſhrub fruit-trees; likewiſe prune and moſs thoſe wanting it, and drain your gardens from wet.

Make hot beds free from north and eaſt winds, in which ſow the ſeed of muſk-melons, purſlain, or cucumbers, &c. Sow onions towards the end of this month, or beginning of the next: ſet beans and peas, each row a foot aſunder.

MARCH.

When murmuring ſounds are heard within the woods,
And ſhowers repeat the daſhing of the floods;
When ſhooting ſtars in numbers ſeem to run,
And fiery clouds infold the riſing ſun;
Or Luna's face with angry red you view,
Theſe all portend high winds and tempeſts too.

In this month (if the weather be mild) plant trees, graft, and cut quick-ſets; cover the roots of fruit-trees that were opened in autumn.

Dung your ground; ſow all manner of garden ſeeds, as parſnips, carrots, parſley, and all manner of pot herbs, *&c.* you may ſet beans, peas, and cabbage-plants.

In gardening ne'er this rule forget,
Your ſeeds ſow dry, your plants ſet wet.

APRIL.

If th' ſun or moon look pale, then ſtorms enſue;
When weather's fair, they're radiant to our view;
If cloath'd in ſcarlet, haſty ſhowers fall,
Or rough winds blowing with no rain at all.

You may now pole hops; ſow hemp and flax; and, if the weather be warm, ſow radiſhes, onions, leeks, marigolds, lettuce, marjoram, hyſop, thyme, winter-ſavoury, and all nice ſeeds that will not endure the froſt.

Set the ſlips of thyme, lavendar, roſemary, *&c.* or of any other ſhrub; you may ſet French beans to be ripe in harveſt.

MAY.

Now chiefly we the ſetting ſun ſurvey,
When to the weſtern globe he takes his way;
If duſky clouds obſcure him from our ſight,
Then rain expect by the next morning light.

In this month weed your hop gardens and cut off all ſuperfluous branches; moſs your fruit-trees and graft; keep down the weeds; ſow and ſet as in the laſt month; and alſo ſet greens, cabbage-plants, and dwarf beans.

JUNE.

When worms and ſnails lie thick upon the ground,
And freſh-dug mole-hills frequently are found;
When pavements ſweat, and boards ſtick cloſe together,
We count theſe ſigns of wet and drizzley weather.

In this month inoculate apples, pears, wall-fruit, *&c.* lop off needleſs branches from your vines, (called Midſummer branches) and ſtop the joynts. At the full-moon in this month and next, gather herbs to keep dry for the whole year: ſow rediſh, lettuce, *&c.* a little after the full.

According to ſome, 'tis beſt to ſheer ſheep, the moon increaſing.

JULY.

If winds are ſtill, and clouds like rocks appear,
Air ſultry hot, ſhew thunder-ſtorms are near;
When ſwallows near the water's ſurface fly,
They ſignify groſs vapours in the ſky.

Prune apricocks and peaches; clip box to what form you pleaſe; ſlip ſtocks, and flowers, and alſo lay them; water your plantations, and ſow turnips.

AUGUST.

Bright ſol ariſing, if you then deſcry
The miſts deſcending from a chryſtal ſky,
And cloſe within the vallies ſeem to lye;
Or if aſcending in an evening clear,
Foreſhew the weather hot and very fair.

Take off all ſuperfluous branches from your ines, and ſuckers from the roots of trees and hrubs, and inoculate. Sow cabbage ſeeds, col-y-flowers, parſnips, carrots, onions, holyhocks, marigolds, lettuce, ſpinage, and all ſuch plants s will endure the winter: tranſplant ſuch lettuce s you intend ſhall abide all winter.

SEPTEMBER.

If in the morn the rainbow paints the cloud,
The wind ſouth-weſt; or if it thunders loud
Expect that rain or ſtorms will happen ſoon;
'Tis ten to one before the afternoon.

Tranſplant moſt part of eating and phyſical herbs, as aſparagus, artichokes, ſtrawberries, *&c.* in fair weather; you may yet ſow radiſh, lettuce, ſpinage, parſnips, carrots, *&c.* Set barberries and ſtrawberries; dig trenches, in which ſet large plants, which in winter froſty nights ſhould be covered, but open them in ſun-ſhining days and warm ſhowers for refreſhment.

OCTOBER.

When after rain the afternoon proves clear,
And in the wind a rainbow looketh fair;
Fine weather after theſe may be expected,
By thoſe that weather-rules have not rejected.

Set crab-tree ſtocks to graft on: Set fruit-ſtones a quarter of a foot deep, with the ſharp end uppermoſt, and cover them with ſtraw from the froſt. Set all kinds of nuts and acorns, and cut roſe-trees but once in two years, if you intend to have ſtore of roſes.

NOVEMBER.

Dark gloomy days now moſtly us attend,
Or nipping froſts our ſummer-beauties end.

At ſome times have we had a winter's thunder,
Which as the proverb ſaith 's a ſummer's wonder.

In this month trench and dung your gardens; uncover the roots of your apple-trees, and ſo let them remain till March; dig up parſnips and potatoes for winter-ſpending; alſo lay up from the froſt turnips, parſnips, carrots, cabbages, and colliflowers, to replant for ſeed in the next ſpring.

DECEMBER.

In every month theſe general rules we find
Still to hold good; redneſs betokens wind;
If mixt with black, or blue, then ſnow, or rain,
Or ſtorms of hail will rattle on the plain.

In this month and next, fell your timber, prune your orchards, and cover your flowers with rotten horſe-dung.

* * *

* * *

Of MENSURATION.

IN proſecution of this art, I ſhall, in this place, only lay down ſuch practical rules as may be of uſe to farmers, graſiers, and country people, whereby they may find the content of any piece of land, timber, *&c.* and find the dimenſions and charge of any ordinary building they may have occaſion to undertake, without the aſſiſtance of another. I begin firſt of all with menſuration of land.

Of LAND-MEASURE.

TO meaſure land, you muſt be provided with *Gunter*'s chain of 100 links, or, for want of this, with a rod or line, in length 16 ½ feet, and a croſs-ſtaff for finding right angles in an irregular field that cannot be meaſured by the ſquare.

You may make a croſs-ſtaff with a piece of board about 5 inches ſquare, and an inch thick, in this manner, *viz.* with a fine ſaw, cut a ſtreight channel near half-way through your board over the middle; then, by a carpenter's ſquare, find the place that (by ſawing another channel like the former) will croſs the other in a ſquare or right angle; this done, bore a hole in the middle of your board on the back-ſide, to put in the end of a ſtick to ſet up: this will repreſent the inſtrument called a croſs-ſtaff.

A TABLE *of* Land-Meaſure.

5½ yards make 1 pole, rod, or perch.
40 poles make 1 rod farundel, or ¼ of an acre.
80 poles make 1 land, or half-acre.
160 poles make 1 acre, ſtatute meaſure.
4 poles make 1 chain, or acre's breadth.
10 chains make 1 acre.

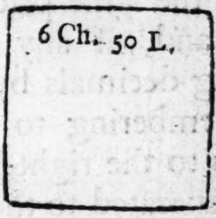
Note. If you meaſure by a rod or line to feet and inches, reduce your meaſure into the loweſt denomination mentioned.

To meaſure a Field *in form of an exact* Square.

Rule. *Carry your chain, or rod, along one ſide; the ſum, multiplied by a like number will give the content.*

Example. *If a direct ſquare encloſure be 6 chains, 50 links (or 26 rods) in the ſide, what is the content?*

$$\begin{array}{lr} & 6,50 \\ & 6,50 \\ \hline & 32500 \\ & 390 \\ \hline \text{Acres} & 4|22500 \\ & 4 \\ \hline & 90000 \\ & 40 \\ \hline \text{Rods} & 36|00000 \end{array}$$



By the rod, thus :—

26
26

156
52

160)676(4 Acres.
640

36 Rods.

*** In meaſuring by *Gunter*'s chain the link are worked as decimals, and in ſetting down ar ſeparated by a comma, or full ſtop.

In this caſe, after you have found the conten of any ground, point off one place more in th product than are decimal places, in both multiplicand and multiplicator ; the figures thus ſeparated on the left-hand ſhew the number o acres ; then multiply the figures cut off to th right-hand by 4, (the farundels in an acre) an point off the ſame places towards the left-hand a before ; and, if any remain, multiply the ſai remaining decimals by 40, (the rods in a farundel) remembering to point off the ſame numbe of places to the right-hand as before ; ſo that th figures ſeparated to the left-hand ſhew the conten in acres, farundels, and rods, as in the foregoin example.

If you work by the rod, after having ſquare the ſide, divide the product, if it be in rods, b 160, the rods in an acre and the quotient wil ſhew the acres, and the remainder the odd rods contained in the field.

To meaſure an Oblong Square, *or* Parallelogram.

Rule. *Multiply the length by the breadth, the product gives the content ſuperficially, or in any flat meaſure.*

Example. *If a piece of ground, in form of a long ſquare, is* 11 *chains long, and* 4 *chains* 25 *links wide, what is the content?*

	C. L.	By the rod, thus: ——
	4,25	44 rods in length.
	11	17 breadth.
	425	308
	425	44
Acres	4|675	160)748(4 Acres.
	4	640
Farundels	2|700	108 Poles.
	40	
Poles	28|000	

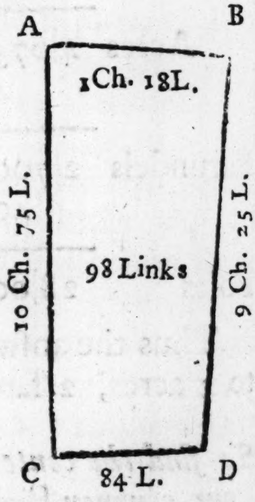
Thus the anſwer is, 4 acres, 108 poles, equal to 4 acres, 2 farundels, and 28 poles.

To find the content of a piece of Land, *in form of our common* Field Acres, *of unequal Sides*, &c.

Rule. *Carry your chain all round the plot, noting the meaſure of every ſide or end; and if it be* *be wider or narrower in the middle, or any other place, than what renders it regular, carry your chain over it, in as many places as you find it curve in and out, and obſerve the meaſure and number of breadths; for if you add the ſum of all the breadths together, and divide by the number of breadths, the quotient is the mean or middle breadth; operate in the ſame method for a mean length, then multiply the mean length by the mean breadth, the product will give you the content.*

Example. *Suppoſe a piece of ground, in form of a common field acre, the length of one ſide* 10 *chains* 75 *links, of the other* 9 *chains* 25 *links; the breadth at one end* 1 *chain* 18 *links, at the other end* 84 *links, the breadth taken near the middle* 98 *links, what's the content?*

	C. L.
1ſt, The ſide A C	10.75
The ſide B D	9.25
Divide by 2) the number of lengths.	20 . . (10
	20
	. .



The quotient (10) is the mean length.

	C. L.
2dly, The ſide A B	1,18
Middle breadth	0,98
The ſide C D	0,84

Divide by 3) the number of breadths. 3 . . (1 the mean breadth.
3

. .

3dly, 10 chains in length and 1 in breadth make the anſwer exactly one ſtatute acre.

The ſame by the Rod, *or* Line.

	Poles
1ſt, 10 ch. 75 links are	43
9 ch. 25 links are	37

2) 80 (40
8

. 0

	Poles	Feet
2dly, 1 ch. 18 links are	4	12
98 links are	3	15
84 links are	3	6

3) 12 . . (4
12

. .

3dly, 40 in length
4 breadth

160) 160(1 Acre. Content as before.
160

…

I here give you a method of parceling out ſmall plots of land, which may be uſeful to many people that would buy enough only for the conveniency of a cottage, which take as follows:

By meaſuring the end *of an* Acre, *or one* ſide *of a* Square Plot, *to find how far you muſt meaſure on the other* ſide, *to take in any quantity of ground you ſhall think proper.*

Rule. *If you meaſure with the chain, reduce the plot of ground you would have, into links, by multiplying its number of chains by* 10000, *the links contained in a ſquare chain*; *divide the product by the links contained in your given ſide, (or end of your acre) the quotient is your anſwer,* i. e. *how far you muſt meaſure along the other ſide to take in the ſaid plot.*

If you meaſure by the rod, reduce the number of poles you intend to mete into feet, by multiplying it by 272¼ *feet, (or omit the* ¼, *and multiply only by* 272, *will make but little difference in ſmall plots) then divide by the number of feet contained in your given ſide, the quotient is the anſwer.*

Example. *Let it be required to find how far to meaſure up a land for a ſquare chain, or 16 ſquare poles, admitting its breadth or end to be 84 links, or 3 poles 6 feet.*

By the chain.

1 ſquare chain
Contains 10000 links

84) 10000 (119 equal to 1 ch. 19 l.
84 (or 13 feet

160
84

760
756

..4

By the rod.
272 omitting decimals
16 poles

1632
272

55) 4352 (79 feet equal to 4 poles
385 (13 feet

502
495

7

In anſwer to this I find by the chain, 1 ch. 19 l. equal to 4 p. 13 f. to be meaſured up the land to produce a ſquare chain, or 16 ſquare rods.

To find the ſuperficial content *of a* Circle.

Rule. *Multiply half the compaſs by half the diameter will give the content.*

Example. *If a circle be* 44 *in compaſs, and* 14 *in diameter, what is its ſuperficial content?*

22 half compaſs
7 half diameter

154 the area or content.

Having the Diameter *of a* Circle, *to find the* Circumference.

Rule. *Multiply the diameter by* 22, *and divide the product by* 7, *is the anſwer.*

Having the Circumference *of a* Circle, *to find the* Diameter.

Rule. *Multiply the circumference by* 7, *and divide by* 22, *is the anſwer.*

To find the ſuperficial content *of an* Ellipſis, *or* Oval.

Rule. *Multiply the tranſverſe, or longeſt diameter, by the conjugate, or ſhorteſt diameter, and that product multiply by the decimals* 7854; *this laſt product is the content.*

EXAMPLE. *If the tranſverſe diameter of an oval, be 12, and the conjugate diameter 8, what is the content?*

```
12        ,7854
 8           72
--       ------
72        15708
         54978
         ------
         56,5488
```

ANSWER, $56\frac{1}{2}$.

Before we enter on menſuration of irregular figures, it will be neceſſary to conſider the property of a triangle.

A triangle is any figure that hath three ſides, and three angles, (or corners) of which there are various ſorts, but each in meaſuring muſt be reduced to right angled-triangles.

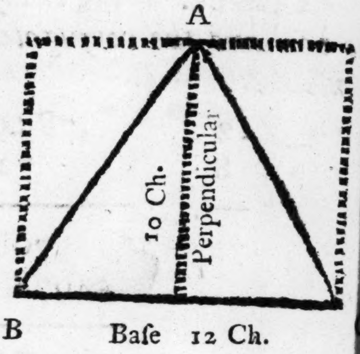
A right angled-triangle hath the two ſhorteſt ſides, (one called the baſe and the other the perpendicular) joyned together in form like the corner of a ſquare, comprehending a quarter of a circle; the longeſt ſide is called the hypothenuſe.

To meaſure a right Angled-Triangle.

RULE. *Multiply the perpendicular into half the baſe, or the baſe into half the perpendicular, will give the content.*

The reaſon of this rule is, becauſe every triangle is equal to half a ſquare, as you may ſee by the following diagram.

EXAMPLE. *If the baſe be* 12 *chains, and perpendicular* 10 *chains, what is the contents of the triangle* ABC?



12 baſe
5 ½ the perp.

ANSW. 60 chains, or 6 acres.

To meaſure an irregular Field.

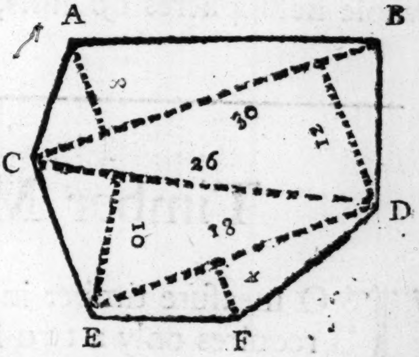
An irregular field is one that hath more th four corners, *viz.* five, ſix, ſeven, &c. whi divide into triangles by the following rules:

RULE I. *By your croſs-ſtick* (*before deſcrib* page 152) *at one of the remoteſt corners, dir your chain acroſs the field to an oppoſite corner; d the like for as many as you ſee convenient, to divi your field into triangles; the lines thus taken a called diagonals, or baſe lines; ſet down the conte of each diagonal as you find them.*

II. *Proceed to find the perpendiculars, or th lines that reduce the field into right angled-triangl thus;—walk along one of your diagonals, 'till, ſetting up your croſs with one channel point along the ſaid line, and the other channel point to any corner that lies next you, without croſſ any diagonal line: do the ſame by every trian that is not right angled, and note down their ſe ral lengths.*

III. *Meaſure every triangle by itſelf (as before ught) 'till you have finiſhed the whole field; then aſt up their ſeveral ſums together, will give you the ontent of the whole field.*

EXAMPLE. *What is the content of a field in orm and numbers like the following diagram?*



iangle, as repreſented the figure, find e content of each, us:

Having found every iangle, as repreſented the figure, find e content of each, us:

For the triangle ABC. Baſe	30
Half the perpendicular	4
Its content	120
For the triangle CBD. Baſe	30
Half the perpendicular	6
Its content	180
For the triangle CDE. Baſe	26
Half the perpendicular	5
Its content	130
For the triangle DEF. Baſe	18
Half the perpendicular	2
Its content	36

Content of the triangles
ABC is — 120
BCD is — 180
CDE is — 130
DEF is — 36

The area 4|66 of the whole field 4 acres 66 links, or 1 half.

Timber Meaſure.

TO meaſure timber in the common method, requires only a two-foot rule, and a ſtring to take the girth of round timber, *&c.*

A TABLE *of* Timber Meaſure.

12 inches make 1 foot lineal.
144 inches make 1 foot ſuperficial.
1728 inches make 1 foot ſolid.

To meaſure the ſuperficial content *of a* Board.

RULE. *If your board is of an equal width, the rule is the ſame as for an oblong ſquare, thus: — multiply the breadth in inches by the length in feet, and divide the product by* 12, *the quotient is the content in feet: if you multiply inches by inches, divide by* 144, *will give you the anſwer as before.*

EXAMPLE. *If a board be* 14 *inches wide, and* 14 *feet long, what is the content?*

14 inches wide
14 feet long

56
14

12) 196 (16
12

76
72

4

Answer, 16 feet 4 inches.

To meaſure a Board *that has one end wider than the other.*

Rule. *Add the breadths of both ends together, of which ſum take half for a mean breadth, and multiply it into the length, the product divide as above, and the quotient is the anſwer.*

Example. *If a board be* 16 *inches at one end, and* 10 *inches at the other, and the length* 17 *foot, what is the content?*

```
To     16 inches
Add    10 inches
       ------
Sum    26
       ------
Half   13
       17 feet
       ------
       91
       13
       ------
   12) 221 (18
       12
       ------
       101
        96
       ------
         5
```

76

Answer, 18 feet 5 inches.

To find the ſolid content *of* Square Timber.

By ſquared timber is meant any tree hewn ou by the carpenters, fit for ſawing, or for gre beams, as ſummers, *&c.* to meaſure whic obſerve ;——

Rule I. *If your tree hath both ends of equ bigneſs, multiply the breadth in inches by the dep in inches, and that product by the length in fe and divide the laſt product by* 144, *the quotient the anſwer in feet.*

II. *But if your tree hath one end larger than the other, reduce them to an exact ſquare, by finding a mean breadth and depth; then proceed as before.*

Example I. *There is a ſquared tree, whoſe ends are of equal breadth and depth,* viz. *breadth* 13 *inches, depth* 11, *and length* 14 *feet; what is the ſolid content?*

Breadth 13
Depth 11

13
13

143
Length 14

572
143

144) 2002 (13 foot
144

562
432

12) 130 (10 inches
10

10

Answer, 13 feet 10 inches.

Note. When the diviſor is 144, divide the remainder by 12, the quotient will ſhew the odd inches as in the laſt example.

EXAMPLE II. *If a tree, whoſe baſe, or ends, are unequal,* viz. *the breadth* 16 *inches and depth* 15 *at one end, the breadth* 8 *inches and depth* 7 *at the other end, and the length* 20 *feet, what is the content?*

The greater breadth	16	The greater depth	15
Leſſer	8	Leſſer	7
Sum	24	Sum	22
Half	12	Half	11

12 mean breadth
11 mean depth

132
20 length

144) 2640 (18 feet
144

1200
1152

12) 48 (4 inches
48

..

ANSWER, 18 feet 4 inches.

⁂ All ſuch timber coming under this rule, ſhould be meaſured as the fruſtum of a pyramid, to be quite exact; yet this way is nearer truth than the common method of adding the middle breadth and depth together, and taking half for the ſide of a mean ſquare.

To meaſure round timber *the common way.*

Rule I. *Take its length, of which meaſure back half way, where (having taken off the bark) put a ſtring round in a place free from knurls, and take the middle girth, and (by doubling your ſtring twice) its fourth part in inches and parts, which multiply into itſelf, and that product into the length in feet, and divide the laſt product by* 144 *will give the content.*

II. *If you take the length of this, or any ſolid body, to inches, then divide by* 1728, *and the anſwer is as before.*

Example. *If a round timber tree be* 25 *feet long, and one fourth of the middle girth* 10 *inches, what's the content?*

```
         10
         10
        ----
        100
         25
        ----
144) 2500 (17 feet
     144
     ----
     1060
     1008
     ----
12)    52 (4 inches
       48
      ---
        4
```

Answer, 17 feet 4 inches.

But for the eaſe and ſpeed of any practitioner, I have invented the following table :

A TA-

A TABLE *ſhewing the* Squares *of the fourth-part of the* Girth, *for the ſpeedy meaſuring of any round* Timber Tree.

¼th of the girth.	Squ.	¼th of the girth.	Squ.	¼th of the girth.	Squ.	¼th of the girth.	Squ.
In. Qu.	Inches	In. Qu.	Inches	In. Qu.	Inches	In. Qu.	Inches
4	16	9 : 1	85	14 : 2	210	19 : 3	390
4 : 1	18	9 : 2	90	14 : 3	217	20	400
4 : 2	20	9 : 3	25	15	225	20 : 1	410
4 : 3	22	10	100	15 : 1	232	20 : 2	420
5	25	10 : 1	105	15 : 2	240	20 : 3	430
5 : 1	27	10 : 2	110	15 : 3	248	21	441
5 : 2	30	10 : 3	115	16	256	21 : 1	451
5 : 3	33	11	121	16 : 1	264	21 : 2	462
6	36	11 : 1	126	16 : 2	272	21 : 3	473
6 : 1	39	11 : 2	132	16 : 3	280	22	484
6 : 2	42	11 : 3	138	17	289	22 : 1	495
6 : 3	45	12	144	17 : 1	297	22 : 2	506
7	49	12 : 1	150	17 : 2	306	22 : 3	517
7 : 1	52	12 : 2	156	17 : 3	315	23	529
7 : 2	56	12 : 3	162	18	324	23 : 1	540
7 : 3	60	13	169	18 : 1	333	23 : 2	552
8	64	13 : 1	175	18 : 2	342	23 : 3	564
8 : 1	68	13 : 2	182	18 : 3	351	24	576
8 : 2	72	13 : 3	189	19	361	24 : 1	588
8 : 3	76	14	196	19 : 1	370	24 : 2	600
9	81	14 : 1	203	19 : 2	380	24 : 3	612

USE *of this Table.*

Having found the middle girth of any tree look its number in the column, noted ¼ *of the girth*, and right againſt it, in the column, noted *Squ.* is the ſquare of that girth: they are calculated to every quarter of an inch, as may be ſeen by the figures 1, 2, 3, under *qu.* ſignifying quarters.

To

To find the content of any Tree *by the foregoing Table.*

Rule. *Find the ſquare anſwering a quarter of the girth, in the table, which multiply by the length, and divide the product by* 144, *the quotient is the anſwer.*

Example. *If a tree be* 11 ½ *inches, in one fourth of the girth, and the length* 26 *feet, what is the content?*

In the table I find 132 the ſquare of 11 inches 2 quarters; multiply by the length, as follows:

```
      132 inches
       26 feet
      ———
      792
     264
     ———
144) 3432 (23 feet
     288
     ———
      552
      432
     ———
12)  120 (10 inches
      12
     ———
      .0
```

Answer, 23 foot 10 inches.

This is the common way of meaſuring round timber, by which (if the ends are of equal ſize)

ſize) is loſt about one foot in five, and is more in trees that are taper, or leſs at one end than the other, and the greater the difference, the greater the error.

More eaſy rules there cannot be for this ;
Can you divide*?—this art, your ſervant is.*

To meaſure the ſuperficial *and* ſolid content *of a* Globe.

Rule I. *By taking its compaſs, find its diameter* (*as in* p. 160) *then multiply the diameter into the circumference, gives the ſuperficial content.*

II. *Multiply the ſuperficial content by a ſixth part of its diameter, and the product will ſhew the ſolidity.*

Example. *Suppoſe a globe of wood or ſtone be* 11 *feet in compaſs, I demand the ſuperficial and ſolid content ?*

```
         In 11 feet are 132 inches the compaſs.
(Page 160) Mult. by   7
                    ———
      Divide by 22) 924 (42 inches the diameter.
                    88
                    ———
                    .44
                     44
                    ———
                     ..
```

Then multiply 132 the compaſs
by 42 the diameter

264
528

5544 inches or 38 ½ feet the (ſuperficial cont.
Multiply by a ſixth part of the diamet. } 7

38808 inches, or 22 feet 5 inches the ſolid content.

The anſwer is, 5544 ſuperficial inches, which divided by 144, quotes 38 feet 6 inches, the ſuperficial content; alſo 38808 ſolid inches, divided by 1728, quotes 22 feet 5 inches the ſolid content.

Maſon's Work.

MAſons work is moſtly taken by the perch of 16 ½ feet, and ſometimes by 18 feet, the cuſtomary way in many places; it is meaſured ſuperficially in pavements, *&c.* but building is generally reckoned by ſolid meaſure.

A TABLE *of Prices of* Maſons Work.

	s.	*d.*
For rough mortered walls, for any building, according to the height thereof, at a penny for every foot; at 14 foot high *per* pearch -	1	2
For paving, and find ſtone, *&c. per* foot - - - - - -	0	3
For working plain cornice, *per* pearch, about - - - - -	1	6
For laying a ruff floor, finding ſtuff, *&c. per* foot - - - -	0	2

Note, The price of ſtone is different, according to the country.

EXAMPLE I. *If a wall be* 132 *feet long, and* 5 *feet high, what will be the meaſure and charge of building?*

```
          132 long
            5 high
        ———————
16,5)  660,0(40 pearches
       660
        ———————
         0
```

Then 40
5

12) 200 (16 ſhillings
12

80
72

8 pence.

ANSWER, 40 pearches, which at 5 *d. per* foot, come to 16 *s.* 8 *d.*

EXAMPLE II. *If an houſe be* 26 *feet long, and* 16 *feet wide, the ſide-walls* 16 *feet high, and the pine-end* $\frac{3}{4}$*th pitch, with one chimney; what will the maſon's work come to?*

Note, For a chimney account double work for that end of the houſe.

The ſide	26	Breadth	16
	3		3
To	52		48
Add	48		

100 feet round the houſe, accounting the chimney.
16 the height.

600
100

1600 feet the content as high as the ſide-wall.

For the pine-ends take ¾ of the breadth for the ſide thereof, which, by putting both the pines together, will be the ſide of a ſquare; thus,

16 the breadth

¾th of which is 12 the ſide
Mult. by 12

144 feet the pine ends
Half 72 add for the chimney

216

Then adding 216, the content of the pines, to 1600, the content of the ſides, *&c.* make 1816 feet, which divide by 16½ feet, will give the perches in the houſe; then accounting 16 *d. per* pearch, will ſhew the charge thereof, as follows:

16.5) 1816,0 (110 pearches
165

166
165

10

```
        110 pearches
        16  pence per pearch
       -----
        660
       11
       -----      2|0)
   12) 1760 (14|6 (7 £.
       12     14
       -----  --
        56    ..
        48
       -----
         80
         72
        ----
          8
```

ANSWER, 110 pearches come to 7 *l.* 6 *s.* 8 *d.*

⁂ In maſon's work, there is nothing allowed for doors, windows, *&c.*

Carpenter's Work.

THE meaſurable parts of carpentry are, flooring, partitioning, and roofing; all which are meaſured by the ſquare, containing 100 feet.

A TABLE *of the prices of* Carpenter's Work *per* Square.

	l.	*s.*	*d.*
Flooring, finding boards -	1	15	0
Ditto, without boards, from 2*s.* 6*d.* to	0	6	0
Roofing with the beſt timber -	2	0	0
Ditto, without finding timber -	0	12	0
Partitioning with good timber -	0	15	0
Ditto, without finding timber -	0	7	6
Sawing oak and elm, for 100 feet	0	2	6

To find the content *of a* Floor, *or* Partition.

RULE. *Multiply the length in feet by the breadth in ditto, the product is the anſwer in feet, which, by cutting off two figures to the right, is the number of ſquares contained therein.*

EXAMPLE I. *If a floor be* 22 *feet long, and* 14 *feet wide, how many ſquares will it contain?*

$$\begin{array}{r} 22 \\ 14 \\ \hline 88 \\ 22 \\ \hline 3|08 \end{array}$$

ANSWER, 3 ſquares 8 feet, which, at 1 *l.* 15 *s.* come to 5 *l.* 5 *s.*

Note, The joiſts are always accounted as much timber as the floor.

EXAMPLE II. *If a partition be* 9 *feet high, and* 14 *feet long, what is the content?*

```
  14
   9
 ────
 1|26
```

ANSWER, 1 ſquare 26 feet, which, at 15 *s.* come to about 19 *s.*

Note, In partitioning you muſt meaſure the doors, frames, and windows by themſelves, and ſubtract their content from the whole; except by agreement they are included.

To meaſure the Roof *of any* Houſe *that is ſet to a middle, or three-quarter pitch.*

RULE. *Find the content of the floor, to which add its half, the ſum ſhall be the content of the roof.*

EXAMPLE. *In the firſt example, the floor is found to contain* 3 *ſquares and* 8 *feet, the half is* 1 *ſquare* 54 *feet, which added together make* 4 *ſquares* 62 *feet, the content; then by accounting* 2 l. per *ſquare, they will come to* 9 l. 4 s. 9 d.

Note, In meaſuring a roof there is no reduction for windows, ſky-lights, or chimney-ſhafts, *&c.*

Slatter's

Slatter's *and* Plaſterer's Work.

SLating is likewiſe meaſured by the ſquare of 100 feet, but Plaſtering is meaſured by the ſquare yard, or 9 ſquare feet.

A TABLE *of the prices of* Slatter'*s and* Plaſterer'*s* Work.

For ſlating, finding all materials, from 15 *s.* to 1 *l.* 5 *s. per* ſquare.

For only workmanſhip, 5 *s. per* ſquare.

For plaſtering, finding materials, 1 *s. per* yard.

For only workmanſhip and lime, from 2 ½ *d.* to 6 *d. per* yard.

To find the content *of a* Slatted Roof.

RULE. *Take a cord, and put it over the ridge, bring both ends under the eves to the ſide wall; the length of the cord multiply into the length of the ridge, the product is the content?*

EXAMPLE I. *If the length of a cord extended over an houſe be 28 feet, and the length of the ridge be 27, how many ſquares doth it contain?*

```
  28
  27
 ———
 196
 56
 ———
 7|56
```

Answer, 7 ſquares 56 feet, which, at 15 *s. per* ſquare, comes to 5 *l.* 13 *s.* 4 *d.*

In ſlatting and tyling, to meaſure a dormer, ſome take the length of its ridge for the ſide of a ſquare; others account 1 foot ſuperficial for 1 foot lineal, on hips, gutters, or dormers.

Example II. *If the ceiling of a room be* 14 *feet one way, and* 12 *feet the other, how many ſquare yards does it contain?*

```
     14
     12
    ———
     28
    14
    ———
 9) 168 (18
    9
    ———
     78
     72
    ———
      6
```

Answer, 18 yards 6 feet, which, at 1 *s. per* yard, come to 18 *s.* 8 *d.*

EXAMPLE III. *If the walls of a room be* 60 *feet round, and* 8 *feet high, how many ſquare yards of plaſtering?*

```
     60
      8
    ----
  9)480 (53
    45
    ---
     30
     27
    ---
      3
```

ANSWER, 53 yards 3 feet, which, at 8 *d. per* yard, come to 1 *l.* 15 *s.* 6 *d.*

Joyner's Work.

THIS is alſo meaſured by the ſquare-yard like plaſtering, and chiefly conſiſts in wainſcoting.

The prices of wainſcoting are various; joyners will find materials, and work it, from 6 *s.* to 3 *s.* or the work only, from 2 *s.* to 1 *s.* 6 *d.*

When boards are worked on both ſides, as doors, window-ſhutters, *&c.* joyners are paid for work and half work; that is, they add half of the meaſure to its product for the content.

EXAMPLE. *If a wainſcoted door be 7 feet high and 4 feet wide, what is the content at work and half?*

7
4

Product 28
Half 14 add

9)42(4
36

6

ANSWER, 4 yards 6 feet, come to 1 *l.* 8 *s.* at 6 *s. per* yard.

Glaſier's Work.

GLaſier's meaſure their work by the foot ſquare, and will take their dimenſions to a quarter of an inch.

They will work up common glaſs for 7 *d.* a foot, and new lead old glaſs for 3 *d. per* foot.

EXAMPLE. *If a window-light be* 4 ½ *feet high, and* 2 ½ *feet broad, what is the content?*

4,5
2,5

225
90

11,25

ANSWER, 11 ¼ feet, which, at 7 *d. per* foot, come to near 6 *s.* and 7 *d.*

Painter's Work.

PAinter's meaſure is like the joyner's, *viz.* by the yard-ſquare, and their prices are according to their colours, from 2 *s.* to 6 *d.*

When they paint mouldings, they meaſure them ſeparately, by putting a ſtring into the cornices, to take every turn and corner.

EXAMPLE. *If a room be painted, whoſe height (being meaſured over the mouldings) is* 10 ¾ *feet, and the compaſs of the room* 82 *feet, what is the content?*

```
        10,75
           82
       ------
        21 50
       86 00
      -------
  9) 881,50 (97,9
     81
     ----
      71
      63
     ----
       85
       81
      ----
        84
```

ANSWER, Almoſt 98 yards, which, at 1 *s.* *per* yard, come to 4 *l.* 18 *s.*

THE

Author's Ætherial Progreſs:

An ALLUSION.

WHEN *Æſtas* crown'd the Earth with Gaiety,
Each Evening ſhew'd a clear and azur'd Sky,
Innumerable Stars of glimmering Light,
And ſparkling Luſtre beautify'd the Night;
In Tranſport theſe I view'd, and much deſir'd
To know their *Courſe*; my raptured Soul admir'd
The wonderous Works of *Him* that dwells above,
Who ſtill attracts my Mind theſe Works to love:
Then I reſolv'd to undertake a *Tour*
Into thoſe Regions to ſurvey them o'er,
Become converſant in their *Order true*,
That at this Diſtance like ſmall Torches ſhew;
Pleas'd at this Thought, prepar'd without delay,
To *Hero-like* purſue the *æthereal Way*;
My Equipage was form'd of two or three
Old *ruſty Authors* for my Company:
When furniſh'd thus, I forward went to find
Minerva to direct and guide my Mind,

To manage my ſmall Equipage, ſo we
Set forth in ſearch of *Uranoſcopy.*
At length *Urania* found, who, ſmiling, ſaid,
"Come, willing youth, with me, be not diſmay'd,
"Survey each *heavenly orb*, and underſtand
"The glorious Works of GOD's Almighty
Hand:"
Then, firſt, we went to view the *radiant Sun*,
And how the other *Planets* round him run;
How each attends *him*, in unwearied Race,
Receiving Light from *his* refulgent Face;
Great Soul of Nature! from whoſe vital Spring,
There's Life and Heat diffus'd through every
Thing;
Plac'd in the Centre of the Univerſe,
Such grateful Emanation to diſperſe
To *all* around *him*, whether far or near,
Within the Compaſs of his active Sphere.

Having ſurvey'd the Body of the *Sun*,
His vital Operations in each *one*,
Next to the *Moon* my *Guides* conducted me,
Her Virtues, Times, and Seaſons to fore-ſee;
"Look here (*Urania* ſaid) and view this Light,
"This is pale *Luna*, Governeſs of Night,
"Who round the *Earth* a monthly Period
makes,
"While yearly round the Sun her Orb ſhe takes:"
Here I beheld how ſwift ſhe ran her Race,
And each elliptic motion learn'd to trace;
Her Magnitude apparent, likewiſe found,
With the Dimenſion of her Orbit round:

Her Body ſeem'd in ſemblance like our Earth,
Her Light from *Phœbus* chiefly has its Birth,
To Earth reflected, from her watry Face,
Like ſolar Rays upon tranſparent glaſs.

Here I obſerv'd *Eclipſes*, with their Cauſe,
And how they are perform'd by *Nature's Laws*;
Made by the *Moon's dark Body*, which if *Light*,
Then no *Eclipſe* could happen in our Sight;
But when her opaque Body intervenes
Betwixt the *Sun* and *Earth*, ſo by that Means,
Like a Partition, veils his ſplendent Face,
Till tranſited into another Place:
Likewiſe when *Luna* by quick Motion's come
Directly oppoſite unto the *Sun*,
So that our *earthy Globe*, her Brow o'erſpreads,
Then ſhe the duſky Track of Darkneſs wades;
Through the Earth's Shadow *Luna* moves along,
And haſteth on till through it ſhe has gone,
So then again receives her borrow'd *Light*,
And the *Eclipſe* is vaniſh'd from our *Sight*.

Then ſaid *Urania*, " Haſt thou viewed well
" How the *Eclipſes* happen? Canſt thou tell
" Thy Neighbours how they fall for Years to
come,
" When from theſe *Regions* thou returneſt *Home?*
" Art thou inform'd how *Phœbus* ſtill appears?
" Canſt *calculate his Place* for future Years?
" And how the *Moon* performs her monthly
" Stage,
" *Shew her true Times and Seaſons* for an Age?
" Come

"Come Youth, and now the *Starry Orbs* ſurvey,
"Trace out the *Planets* true *Elliptic-Way*:
"Learn by theſe *wonderous Works* God to revere,
"And ſing his Praiſes in an higher *Sphere*,
"For mortal *Men* muſt ſhortly diſappear."

E R R A T A.

Page 28, line 2, for 1671 read 1761. — Ditto, l. 7, read 1. — P. 37, l. 14, read imagined. — P. 39, l. 3, read is. — P. 47, lines 8, 9, 10, for ſign, read ſine. — P. 48, whenever you meet with the word aſcention, read aſcenſion. — Ditto, l. 22, for ♋, read ♑. — P. 55, l. 8, for 36, read 46. — P. 57, l. 3, for 52°, read 51°. — Ditto, l. 8, for 23°, read 33°. — P. 58, l. 10, read difference. — P. 69, laſt l. for deſtroy, read deſtroys. — P. 93, l. 1. for 52°, read 51° 41′. — P. 95, l. 1, ditto. — P. 102, under 1756, for Full M. 18 D. read 15 D. — P. 104, l. 25, for eter, read enter. — P. 112, l. 5, for Fomahaut, read Fomahant. — P. *115, under 1758, for New M. 8 D. read 2 D. — In December, P. 113, col. 1, for 29, read 26. — P. 115, l. 25, dele the word *the*. — P. 117, l. 18, read ſun-ſet. — P. 118, l. 18, for reigns, read reins. — P. 120, l. 11, for 11, read 18. — P. 167, l. 16, for foot, read feet. — P. 172, l. 28, read feet.

There are ſome proper names without capitals, and other literal errors not material; but if any of conſequence have eſcaped our notice, by a friendly correction you will oblige the author.

Kind reader, when an Error you eſpy,
Correct with Candor, or elſe paſs it by;
For all Men err ſince *Adam* firſt tranſgreſt,
The Printers err, and I among the reſt.

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